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TRAVEL AND TOURISM IN MICHIGAN:
A STATISTICAL PROFILE

Second Edition

Travel, Tourism, and Recreation Resource Center
Michigan State University

ABOUT THE TTRRC. . .

The Travel, Tourism, and Recreation Resource Center at Michigan State University was established in 1985. Its central mission is to contribute to the orderly development of Michigan's travel and tourism industry, and thus to the vitality of the state's economy.

A needs assessment concluded that the development of the industry was being hindered by a lack of timely information required to attract and target investment, and by a lack of knowledge on how to exploit existing and emerging information technologies. To address these obstacles to development the Center:

--conducts research to fill crucial information voids;

--combines the resulting information with information generated by other organizations into a centralized data base; and

--conducts educational programs to help the industry gain the knowledge and skills necessary to compete more effectively and to take fuller advantage of the Center's data base. These educational programs frequently involve the use of custom-made videotapes and workbooks.

Much of the information gathered by the Center is analyzed in its computerized travel monitoring system and published in monthly, seasonal, and annual reports on the volume of travel activity in Michigan. These reports provide decision-makers with a timely and objective basis by which they can assess the performance of the industry.

In fulfilling its mission, the Center relies heavily on cooperative programming. Few projects are initiated without the direct and indirect cooperation of one or more other campus units and/or off-campus organizations. This document is an example of such cooperative efforts. It could not have been produced without continuing funding support from the Michigan Agricultural Experiment Station and the Cooperative Extension Service, or without financial assistance from the Michigan Travel Bureau and major corporations, smaller organizations and businesses, and generous individuals. In addition to this financial support, many other organizations contributed data, while still others developed or helped develop key chapters. Finally, as is the case with many of the Center's projects, the support of faculty and staff in MSU's Department of Park and Recreation Resources figured prominently in helping to bring this project to fruition.

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TRAVEL AND TOURISM IN MICHIGAN:
A STATISTICAL PROFILE

Edited
by
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Daniel M. Spotts
June 19, 1991

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A directory of these individuals and organizations is provided in Appendix C (page 569).

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PREFACE

This book is a compendium of statistics on travel and tourism in Michigan gleaned from a wide variety of government, academic, and private sources. It is intended to help planners, developers, consultants, legislators, public officials, entrepreneurs, and travel marketing professionals make informed decisions with respect to the state's travel and tourism industry.

The second edition represents an update and significant expansion of the original volume. Six new chapters have been added on the "Characteristics of Michigan's Travel Market," "Federal and State Recreation Lands in Michigan," "The Interrelations of Agriculture and Tourism in Michigan," "Tourist Attractions in Michigan," "Off-Road Vehicle Riding in Michigan," and "Hiking and Backpacking in Michigan." In addition, new material has been added to the chapters on traffic flows, commercial lodging, Bed & Breakfast establishments, eating and drinking places, state parks, fishing, golfing, hunting, winter sports, and employment. Many improvements also have been made to each of the remaining chapters of the book.

The second edition is designed to be a companion volume to the first edition; most of the statistics in the original volume have not been reprinted herein. For example, the chapter on sales and use tax collections includes statistics on 1985 through 1989, but does not include the 1983 and 1984 statistics published in the first edition. It was not possible to update all information contained in the first edition due to the discontinuation of report series (e.g., passport statistics) or the unavailability of more recent information (e.g., counts of second homes and other temporary residences).

The book contains information at both a micro and a macro level. At a micro level, information is presented on the quantity of recreation and travel resources and the volume of travel activity in specific communities and counties to help businesses, consulting firms, chambers of commerce, convention and visitors bureaus, and local governments make business location decisions and develop marketing strategies. This information includes county-level inventories of recreation and travel facilities and indicators of travel activity in specific locales, such as highway traffic counts, state park attendance, and hotel/motel use tax collections.

At a macro level, the book provides information on the status of Michigan's travel and tourism industry as a whole to help state legislators and government officials make policy decisions and plan the state's marketing strategies. Because the travel and tourism industry is affected by a host of social and economic forces, constant surveillance of its performance is necessary to ensure that remedies can be prescribed when the industry or any of its component sectors need strengthening. Such surveillance is especially important in view of the fierce competition between Michigan and surrounding states for greater shares of the region's travel market. This rivalry is amply illustrated by Illinois' FY1990-91 travel office budget of $31.9 million--presently the highest in the nation (Table 2-1; page 8).

To facilitate informed decision-making at the state level, the book presents statewide information on travel promotion, economic impact, and the status of the principal sectors of the industry. In particular, the book contains numerous tables that show Michigan's standing relative to other states on some variable. These tables are intended to help describe Michigan's competitive advantages and disadvantages vis-a-vis other states. Some tables show Michigan's standing relative to its principal competitors, i.e., the surrounding states of Illinois, Indiana, Ohio, Wisconsin, and Minnesota. Other tables show Michigan's standing relative to each of the other states in the nation. The purpose for providing this amount of detail in the latter type of table is two-fold. First, placing Michigan in a national perspective throws considerable light on the nature of travel and tourism in this state, and this is done most explicitly by showing Michigan in relation to each of the other states. Placing Michigan in a national perspective is particularly important since competition has been extending beyond regional boundaries. And second, some users of the book who may be considering locating a business in Michigan may wish to compare Michigan with possibly any other state on a wide variety of variables.

Many of the differences between Michigan and other states portrayed in these tables are due in part to disparities in the populations of these states. For example, since both Illinois and Ohio are more populous than Michigan, it is not surprising that they also contain more golfers (Table 17-1; page 345). The intervening influence of population size has been eliminated in many tables by displaying figures on a per capita basis. However, in the case of other tables it is useful to keep in mind that in all three years for which population-related data are presented (1980, 1988, and 1989), Michigan ranked eighth in the nation in population size (Table P-1). Consequently, if Michigan's ranking on some population-related variable is eighth, this is what one would expect given the size of Michigan's population vis-a-vis other state populations. If, on the other hand, Michigan's ranking on a population-related variable is above or below eighth, this indicates that its standing differs from what one would expect merely on the basis of its population size. For example, while Michigan ranked eighth in population in 1989, it ranked second in the number of recreation vehicle shipments it received in 1989 (Table 14-8; page 246), which may reflect the abundance of camping opportunities in this state.

The book focuses on travel and tourism in Michigan, "tourism" meaning recreation involving travel outside one's home area. Consequently, its contents do not deal with all forms of recreation but rather with those recreation activities that are important pursuits of tourists traveling in Michigan. Thus information is presented on the availability and/or utilization of opportunities for camping, boating, fishing, golfing, off-road vehicle riding, hiking/backpacking, hunting, snowmobiling, downhill skiing, and cross-country skiing, but not on the availability and/or utilization of neighborhood parks, community centers, and other local recreation facilities. It should be recognized, however, that the recreation opportunities that are discussed herein are utilized by local residents as well as tourists, and that this local use is included in statistics on the utilization of these opportunities (e.g., boat-days, attractions attendance).

The problem with most statistical abstracts is that they present research findings and other information with little or no discussion of the methods used to derive the information and/or the limitations of the information. This, of course, can lead to inappropriate interpretations. An effort has been made to ameliorate this problem as much as possible by discussing data limitations in footnotes to tables and in the texts. However, readers are encouraged to consult the sources of the information reprinted herein to learn more about the nature of any information on which they wish to base major decisions.

Each table in the book contains the most current information that was available at the time the table was constructed. All figures presented in these tables were either obtained directly from the source organization's computer files or were entered into computers at MSU and subsequently proofread against the source's published figures. All dollar figures are in current, rather than constant, U.S. dollars with the exception of certain values plotted in Figure 7-2 (page 107). Seeming inconsistencies in statistics from different sources may be due to differing definitions, analytical procedures, and/or time periods.

The counties and basic regions referred to throughout the book are defined in Figure P-1. The terms "Upper Peninsula," "Northern Lower Peninsula," and "Southern Lower

Table P-1. Resident population of states: 1980, 1988, and 1989.

Rank	State	Population (000) As of April 1, 1980 (Census)	Rank	State	Population (000) As of July 1, 1988 (Estimate)	Rank	State	Population (000) As of July 1, 1989 (Estimate)
1	CA	23,668	1	CA	28,314	1	CA	29,063
2	NY	17,558	2	NY	17,909	2	NY	17,950
3	TX	14,229	3	TX	16,841	3	TX	16,991
4	PA	11,864	4	FL	12,335	4	FL	12,671
5	IL	11,427	5	PA	12,001	5	PA	12,040
6	OH	10,798	6	IL	11,614	6	IL	11,658
7	FL	9,746	7	OH	10,855	7	OH	10,907
8	■ MI	9,262	8	■ MI	9,240	8	■ MI	9,273
9	NJ	7,365	9	NJ	7,721	9	NJ	7,736
10	NC	5,882	10	NC	6,489	10	NC	6,571
11	MA	5,737	11	GA	6,342	11	GA	6,436
12	IN	5,490	12	VA	6,015	12	VA	6,098
13	GA	5,463	13	MA	5,889	13	MA	5,913
14	VA	5,347	14	IN	5,556	14	IN	5,593
15	MO	4,917	15	MO	5,141	15	MO	5,159
16	WI	4,706	16	TN	4,895	16	TN	4,940
17	TN	4,591	17	WI	4,855	17	WI	4,867
18	MD	4,217	18	WA	4,648	18	WA	4,761
19	LA	4,206	19	MD	4,622	19	MD	4,694
20	WA	4,132	20	LA	4,408	20	LA	4,382
21	MN	4,076	21	MN	4,307	21	MN	4,353
22	AL	3,894	22	AL	4,102	22	AL	4,118
23	KY	3,661	23	KY	3,727	23	KY	3,727
24	SC	3,122	24	AZ	3,489	24	AZ	3,556
25	CT	3,108	25	SC	3,470	25	SC	3,512
26	OK	3,025	26	CO	3,301	26	CO	3,317
27	IA	2,914	27	OK	3,242	27	CT	3,239
28	CO	2,890	28	CT	3,233	28	OK	3,224
29	AZ	2,718	29	IA	2,834	29	IA	2,840
30	OR	2,633	30	OR	2,767	30	OR	2,820
31	MS	2,521	31	MS	2,620	31	MS	2,621
32	KS	2,364	32	KS	2,495	32	KS	2,513
33	AR	2,286	33	AR	2,395	33	AR	2,406
34	WV	1,950	34	WV	1,876	34	WV	1,857
35	NE	1,570	35	UT	1,690	35	UT	1,707
36	UT	1,461	36	NE	1,602	36	NE	1,611
37	NM	1,303	37	NM	1,507	37	NM	1,528
38	ME	1,125	38	ME	1,205	38	ME	1,222
39	HI	965	39	HI	1,098	39	HI	1,112
40	RI	947	40	NH	1,085	40	NV	1,111
41	ID	944	41	NV	1,054	41	NH	1,107
42	NH	921	42	ID	1,003	42	ID	1,014
43	NV	800	43	RI	993	43	RI	998
44	MT	787	44	MT	805	44	MT	806
45	SD	691	45	SD	713	45	SD	715
46	ND	653	46	ND	667	46	DE	673
47	DC	638	47	DE	660	47	ND	660
48	DE	594	48	DC	617	48	DC	604
49	VT	511	49	VT	557	49	VT	567
50	WY	470	50	AK	524	50	AK	527
51	AK	402	51	WY	479	51	WY	475
	US	226,546		US	245,807		US	248,239

SOURCES: U.S. Bureau of the Census. 1989. "State Population and Household Estimates, With Age, Sex, and Components of Change: 1981-88." Current Population Reports, Population Estimates and Projections, Series P-25, No. 1044, Table 3.

U.S. Bureau of the Census. 1989. "Five States Growing By at Least 10 Percent Since 1985, Census Bureau Says." News Release CB89-204. Washington, D.C.: U.S. Bureau of the Census.

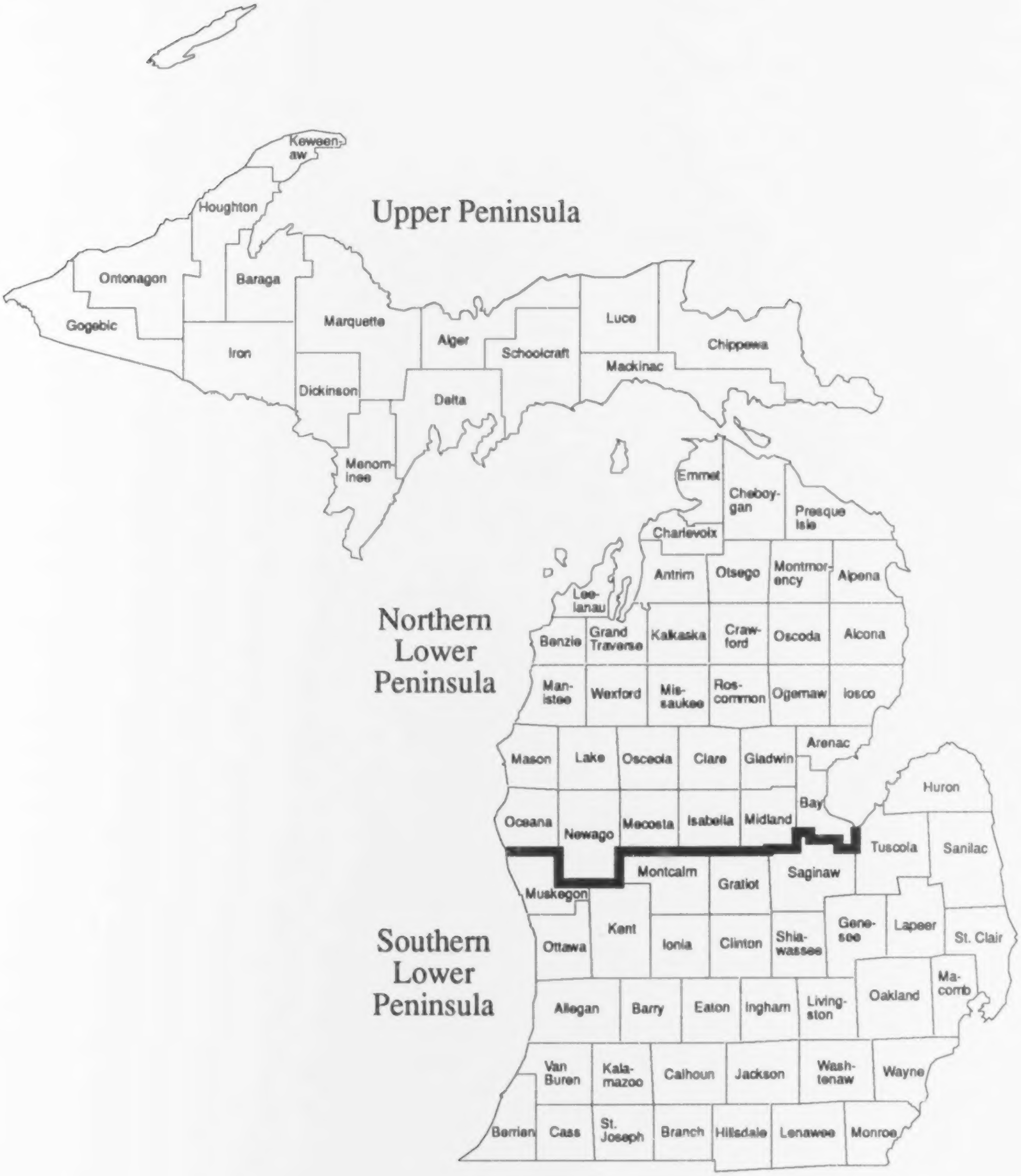
Upper Peninsula
Keweenaw
Houghton
Ontonagon
Baraga
Gogebic
Marquette
Luce
Chippewa
Iron
Alger
Schoolcraft
Mackinac
Dickinson
Delta
Menominee
Emmet
Cheboygan
Presque Isle
Charlevoix
Antrim
Otsego
Montmorency
Alpena
Leelanau
Northern Lower Peninsula
Benzie
Grand Traverse
Kalkaska
Crawford
Oscoda
Alcona
Manistee
Wexford
Missaukee
Roscommon
Ogemaw
Iosco
Arenac
Mason
Lake
Osceola
Clare
Gladwin
Huron
Bay
Oceana
Newago
Mecosta
Isabella
Midland
Tuscola
Sanilac
Montcalm
Gratiot
Saginaw
Muskegon
Genesee
Lapeer
Kent
Southern Lower Peninsula
Ottawa
Ionia
Clinton
Shiawassee
St. Clair
Macomb
Oakland
Allegan
Barry
Eaton
Ingham
Livingston
Van Buren
Kalamazoo
Calhoun
Jackson
Washtenaw
Wayne
Berrien
Cass
St. Joseph
Branch
Hillsdale
Lenawee
Monroe

Figure P-1. Counties and basic regions in Michigan.

Peninsula" as used throughout the book pertain to the three regions shown in this figure. The only exception to this is discussed in footnotes to Tables 20-5 through 20-15.

At the end of most chapters, both the literature cited therein and additional references on the general topic of the chapter are listed. These additional references are provided to inform readers of useful literature available on specific subjects. Profiles of contributing authors are provided in Appendix A. A glossary of abbreviations is provided in Appendix B.

The information contained in this book is comprehensive, but not exhaustive. Every effort has been made to include as much useful and current information as possible within the limitations of the project budget. Many readers will nevertheless find that the book does not contain certain types of information they need. In many cases this is because the information does not exist. Indeed, at present there is no available information on some of the most basic characteristics of travel and tourism in Michigan, such as the statewide economic impact of certain recreation activities (e.g., snowmobiling), the number of travelers visiting Michigan or its component regions, or occupancy rates in commercial lodging establishments in certain regions of the state.

We hope you find the book useful and invite your comments on how it might be further improved.

Daniel M. Spotts

CHAPTER 1

DISTINGUISHING FEATURES OF TRAVEL AND TOURISM IN MICHIGAN

Daniel M. Spotts

Introduction

Certain aspects of travel and tourism in Michigan are "distinguishing" either in the sense of being singular characteristics of travel and tourism within this state, or in the sense of being outstanding in relation to comparable aspects of travel and tourism in other states. Since a knowledge of these distinguishing features serves to describe the character of travel and tourism in Michigan, and helps to identify ways in which Michigan's travel and tourism system may hold competitive advantages over those of other states, a listing of these special characteristics is provided in this chapter. This listing does not include all aspects of travel and tourism in Michigan that might be considered "distinguishing," but it does encompass all that the author was able to definitively verify. The sources of the information presented below are shown in parentheses. These sources were organizations and/or publications. If the source was a publication, this publication is cited at the end of the chapter.

Unique Recreation and Travel Resources in Michigan

Porcupine Mountains Wilderness State Park in Michigan's Upper Peninsula contains the largest virgin hardwood forest in eastern North America west of the Adirondacks (Crispin, 1980:176).

Michigan's Upper Peninsula contains over 100 waterfalls. Foremost among them is the Upper Falls of the Tahquamenon River, the second largest waterfall east of the Mississippi River (Upper Peninsula Travel and Recreation Association).

Michigan has the largest free-roaming elk herd east of the Mississippi River. The herd consists of about 980 animals (Michigan Dept. of Natural Resources, Wildlife Division).

Michigan contains twelve sites that have been designated National Natural Landmarks by the U.S. Secretary of the Interior (U.S. National Park Service). See p. 64.

The 748-ft. Plaza Hotel in Detroit's Renaissance Center, measured from its rear entrance level, is the tallest hotel in the world (McFarlan, 1990:90).

Quantity of Recreation Resources in Michigan

In 1988 Michigan had more public golf facilities and more public golf courses than any other state in the U.S. (National Golf Foundation, 1989). See p. 346.

In 1990 Michigan contained 44 downhill ski areas--more than any other state except New York (Enzel, 1990). See p. 432.

In FY1988-89 Michigan ranked fifth in the nation in number of operational state parks and nineth in the nation in total acreage of its state parks (National Association of State Park Directors, 1990:1). See p. 204.

In 1985 nearly 93,000 designated campsites were available to campers on public and private land (Nelson, Table 14-1 herein).

Michigan's state park system contains more modern campsites than any other state park system in the nation (National Association of State Park Directors, 1990:7). See p. 204.

Michigan has 36,050 miles of stream (Brown, 1944) and 10,188 lakes and ponds five or more acres in size (Humphreys, et. al., n.d.:4).

Michigan is the only state that borders on four of the five Great Lakes. Its 3,251-mile Great Lakes shoreline is longer than the freshwater shoreline of any other state (Sommers, 1977:1, 18).

Michigan has ten state and federally-administered Great Lakes bottomland preserves with a combined area of over 1.7 million acres. These preserves contain several hundred 19th and early 20th Century shipwrecks which provide an abundance of recreational diving experiences (Michigan Department of Natural Resources). See p. 68.

Recreational use of Michigan's water resources is facilitated by 1,406 public access sites (Michigan Dept. of Natural Resources, 1990a), and 86 recreational harbors on the Great Lakes (Michigan Dept. of Natural Resources, 1990b:1). See pp. 260 and 266.

Michigan contains nearly 7.6 million acres of federal and state land available to the public for recreation. This land includes nearly 250,000 acres of land included in the National Wilderness Preservation System and more state land available for recreation than any other state east of the Mississippi River except Florida (Wells and Eidelson, Tables 4-1, 4-3, and 4-9 herein).

In 1980 Michigan contained 215,958 second homes and other temporary residences -- more than any other state except Florida (U.S. Bureau of the Census, 1983: Table 71). See p. 177.

Travel Promotion and Advertising in Michigan

The Michigan Travel Bureau's projected total budget for 1990-91 of $14.5 million is the fifth largest state travel office budget in the nation (U.S. Travel Data Center, 1991:6). See p. 8.

The Michigan Travel Bureau's projected advertising budget for 1990-91 of $3.8 million is the 12th largest state travel office advertising budget in the nation (U.S. Travel Data Center, 1991:11). See p. 8.

In 1989 Michigan ranked fifth in the nation in advertising expenditures in U.S. measured media (Ogilvy and Mather, 1990:IV-4). See p. 11.

At Michigan's 13 highway welcome centers 9.6 million pieces of literature were distributed in 1990 (Michigan Dept. of Transportation). See p. 17.

Amount of Outdoor Recreation That Takes Place in Michigan

Michigan's state park system is one of the most heavily visited in the nation. In FY1988-89 the system ranked tenth in the nation in number of day visits, second in number of overnight visits, and tenth in total number of visits (National Association of State Park Directors, 1990:9). See p. 205.

In 1986 Michigan's registered boat owners logged 26.6 million recreational boat-days (Talhelm, Jordan, and Holecek, 1988:9) See p. 262.

Michigan ranks among the top five states in the nation in the number of angler-days and hunter-days that took place within its borders in 1985 (U.S. Fish and Wildlife Service, 1988: 128, 129). Michigan also ranks among the top five states in the nation in the number of angler-days logged by nonresidents within its borders in 1985 (U.S. Fish and Wildlife Service, 1988: 128).

In FY1989, 938,503 individuals received hunting licenses issued by the state of Michigan--more than the number of individuals that received hunting licenses issued by any other state except Texas and Pennsylvania (U.S. Fish and Wildlife Service).

In FY1989, 1,619,485 individuals received fishing licenses issued by the state of Michigan--more than the number of individuals that received fishing licenses issued by any other state except California and Texas (U.S. Fish and Wildlife Service).

Private Investment in and Spending on Recreation and Travel in Michigan

In 1989 Michigan had more numbered boats than any other state (U.S. Coast Guard, 1990:4). See p. 259.

In 1990 Michigan had more registered snowmobiles than any other state (International Snowmobile Industry Association). See p. 430.

In 1989 Michigan ranked second in the nation in the number of recreation vehicle shipments it received (Recreation Vehicle Industry Association, 1990:13). See p. 246.

In 1988 Michigan led the nation in the sale of marine accessories, and ranked third in the sale of boats (National Marine Manufacturers Association, n.d.:6, 7). See p. 296.

In 1989 U.S. residents spent an estimated $6.4 billion on travel in Michigan. Michigan ranked twelfth nationally with respect to such expenditures (U.S. Travel Data Center, 1991). See p. 453.

In 1986 registered Michigan boat owners spent over $1.8 billion dollars on boating in Michigan (Talhelm, Jordan, and Holecek, 1988:29). See p. 264.

In 1985 Michigan ranked among the top five states in the nation in terms of trip-related spending by anglers within its borders, and in terms of trip-related spending by hunters within its borders (U.S. Fish and Wildlife Service 1988:137).

Nationally-Distributed Recreation Products Manufactured in Michigan

SMI, Inc., of Midland, Michigan is the nation's largest manufacturer of snowguns (SMI, Inc.)

The Iverson Snowshoe Company of Shingleton, Michigan handmakes snowshoes that are used by recreationists, trappers, park rangers, and professional conservationists from Maine to Alaska (Iverson Snowshoe Company).

The Sawyer Canoe Company of Oscoda, Michigan manufactures canoes that are distributed throughout the United States (Sawyer Canoe Co.).

Pioneering Contributions to the Development, Management, and Promotion of Recreation and Travel Resources

In 1884 Michigan's Pere Marquette River was the site of the first planting of brown trout in North America (Dennis, 1986:57).

The nation's first salaried game and fish warden was hired in Michigan in 1887 (Kane, 1981:1263).

The Detroit Convention Bureau, founded in 1896, is the oldest convention bureau in the world (Metropolitan Detroit Convention and Visitors Bureau).

Michigan was one of the first states in the nation to promote tourism. The Northeast Michigan Development Bureau of Bay City (predecessor of the former East Michigan Tourist Association), and the Upper Peninsula Development Bureau (predecessor of the Upper Peninsula Travel and Recreation Association), were both established in 1910 (McIntosh, 1982:23).

The nation's first travel information center was constructed in Michigan in 1935 on US-12, south of New Buffalo. A second travel information center, completed in Menominee in 1937, is the oldest facility of its kind in continuous operation in the U.S. (Michigan Department of Transportation; Michigan Department of Transportation, 1985:36).

The nation's first roadside park was constructed in Michigan in 1935 on M-43 east of Lansing (Michigan Department of Transportation; Michigan Department of Transportation, 1985:36).

Michigan was the first state to provide highway users with roadside picnic table sites (Michigan Department of Transportation, 1985:36).

One of the nation's first college curriculums in park management was established in 1935 at Michigan State University (LaGasse and Cook, 1965:24).

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CHAPTER 2

TRAVEL PROMOTION AND ADVERTISING IN MICHIGAN

Daniel M. Spotts

Introduction

Millions of dollars are spent each year to entice travelers to visit Michigan. The magnitude of these expenditures clearly warrants an examination of this critical component of Michigan's travel and tourism system. This chapter presents an overview of travel promotion and advertising in Michigan by: (1) describing the organizational framework in which these activities take place, (2) comparing the budgets and advertising expenditures of the Michigan Travel Bureau with those of competing state and provincial travel offices, and (3) discussing travel advertising at Michigan's highway welcome centers.

Organizational Framework

Travel promotion and advertising in Michigan takes place at the state level, at a regional level, and at a local level. The Michigan Travel Bureau is responsible for promotion and advertising at the state level. In fulfilling this responsibility the Bureau conducts familiarization tours for press and travel writers, attends travel shows, works with group travel organizations, conducts marketing research, develops and distributes promotional literature, directs paid advertising programs that are implemented by advertising agencies, and engages in a host of other activities.

Travel promotion and advertising at the regional level are coordinated by two regional tourist associations (RTAs): the Upper Peninsula Travel and Recreation Association and the West Michigan Tourist Association. These associations consist of member organizations and individuals who are assessed dues which support the association's promotion and advertising programs. Until recently the state also had two other RTAs, the Travel and Tourism Association of Southeast Michigan and the East Michigan Tourist Association, but the former disbanded in 1989 and the latter disbanded in 1990. The boundaries of current and former RTAs are shown in Figure 3-1 (page 45).

Travel promotion and advertising at the local level are conducted by convention and visitors bureaus (CVBs), chambers of commerce, counties, cities and villages, and individual businesses. CVBs provide travelers with information on lodging, entertainment, attractions, and events in their respective communities, and help arrange business meetings and conventions. Chambers of commerce develop and distribute promotional literature, maintain and staff offices which provide information to travelers, and conduct a variety of other promotional activities. Counties, cities, villages, and individual businesses develop promotional literature distributed at chambers of commerce and highway welcome centers and conduct various other activities to promote themselves.

State Travel Promotion and Advertising Budgets

The U.S. Travel Data Center (USTDC) annually conducts a survey of state travel offices to obtain information on the activities and budgets of each such office in the U.S. According to the USTDC's *Survey of State Travel Offices 1990-91*, the Michigan Travel Bureau's projected total budget for FY1990-91 is $14.5 million (Table 2-1). This is the fifth largest state travel office budget in the nation, exceeded only by the state travel office budgets of

Table 2-1. Projected total budgets and projected advertising budgets of the nation's state travel offices, FY1990-91.

Rank	State	Date FY Begins	Projected Total Budget	Rank	State	Projected Advertising Budget[1]	Rank	State	Projected Advertising Budget As a % of Projected Total Budget
1	IL	7/1	$ 31,900,000	1	IL	$ 10,000,000	1	MO	78.41
2	HI	7/1	22,347,664	2	NY	6,900,000	2	WV	71.51
3	TX	9/1	19,361,256	3	MO	5,089,223	3	LA	51.85
4	PA	7/1	14,822,305	4	LA	4,900,000	4	CA	50.77
5	■ MI	10/1	14,455,400	5	HI	4,713,521	5	NY	48.91
6	NY	4/1	14,106,800	6	FL	4,529,600	6	AZ	47.43
7	FL	7/1	11,883,603	7	TX	4,500,000	7	AR	45.68
8	TN	7/1	10,952,600	8	CA	4,265,000	8	SD	45.55
9	AK	7/1	10,189,100	9	AK	3,992,663	9	WY	45.38
10	LA	7/1	9,450,000	10	PA	3,888,100	10	GA	44.25
11	SC	7/1	9,352,000	11	GA	3,887,843	11	RI	43.78
12	WI	7/1	8,788,400	12	WI	3,800,000	12	WI	43.24
13	GA	7/1	8,786,833	12	■ MI	3,800,000	13	IA	43.05
14	MN	7/1	8,593,497	13	CO	3,320,000	14	NC	42.77
15	CA	6/1	8,400,000	14	AR	3,288,710	15	NJ	42.01
16	CO	7/1	8,254,000	15	NJ	3,200,000	16	UT	41.19
17	VA	7/1	7,825,486	16	NC	3,074,350	17	MT	40.81
18	NJ	7/1	7,618,000	17	TN	3,015,000	18	CO	40.22
19	AR	7/1	7,200,000	18	SC	2,985,000	19	KY	39.38
20	NC	7/1	7,188,329	19	AZ	2,700,000	20	AK	39.19
21	MD	7/1	6,910,000	20	WV	2,672,821	21	FL	38.12
22	OK	7/1	6,887,643	21	KY	2,600,000	22	NM	37.44
23	KY	7/1	6,602,500	22	OK	2,231,709	23	MA	36.36
24	MO	7/1	6,490,716	23	VA	2,205,980	24	IN	35.71
25	AZ	7/1	5,692,300	24	MT	2,084,775	25	VT	34.98
26	MA	7/1	5,500,000	25	MA	2,000,000	26	OK	32.40
27	AL	10/1	5,417,121	26	IA	1,975,000	27	SC	31.92
28	OH	7/1	5,375,441	27	UT	1,748,800	28	IL	31.35
29	MT	7/1	5,108,418	28	WY	1,646,648	29	NH	30.89
30	NV	7/1	5,080,588	29	SD	1,617,000	30	VA	28.19
31	IA	7/1	4,588,000	30	NM	1,502,801	31	ME	28.00
32	UT	7/1	4,245,400	31	AL	1,497,860	32	AL	27.65
33	NM	7/1	4,014,317	32	MN	1,312,300	33	TN	27.53
34	WV	7/1	3,737,439	33	NV	1,260,000	34	■ MI	26.29
35	WY	7/1	3,628,841	34	IN	1,250,000	35	PA	26.23
36	SD	7/1	3,550,000	34	RI	1,250,000	36	ND	24.87
37	IN	7/1	3,500,000	35	MD	1,200,000	37	NV	24.80
38	WA	7/1	3,096,791	36	VT	903,175	38	TX	23.24
39	NH	7/1	2,903,844	37	NH	896,910	39	MS	22.12
40	RI	7/1	2,855,000	38	WA	526,137	40	HI	21.09
41	ID	7/1	2,792,096	39	OH	500,000	41	NE	21.03
42	VT	7/1	2,582,000	39	MS	500,000	42	CT	19.30
43	OR	7/1	2,477,793	40	ME	450,000	43	MD	17.37
44	MS	7/1	2,260,370	41	ID	412,000	44	WA	16.99
45	KS	7/1	2,132,585	42	OR	396,293	45	OR	15.99
46	ME	7/1	1,607,408	43	ND	373,000	46	MN	15.27
47	NE	7/1	1,590,092	44	NE	334,385	47	ID	14.76
48	ND	7/1	1,500,000	45	CT	240,000	48	DE	9.86
49	CT	7/1	1,243,509	46	KS	175,000	49	OH	9.30
50	DE	7/1	1,116,000	47	DE	110,000	50	KS	8.21
	Total		$355,961,485		Total	$121,721,604		US	34.20

NOTE: Many figures lack strict comparability. For example, some state travel offices pay rent and utilities, whereas others do not. Also, in some states the state travel office operates welcome centers, whereas in other states welcome centers are operated by a separate state agency.

[1] Figures are the sums of media purchase and production costs.

SOURCE: U.S. Travel Data Center. 1991. Survey of State Travel Offices 1990-91. Washington, D.C.: U.S. Travel Data Center. Reprinted with permission.

Illinois, Hawaii, Texas, and Pennsylvania. Although the dollar amount of Bureau's total budget has grown in the past five years, its national ranking has dropped--its projected total budget for FY1985-86 of $11.8 million was at that time the second largest in the nation (USTDC, 1985:4).

The Michigan Travel Bureau's projected advertising budget for FY1990-91 is $3.8 million, the 12th largest state travel office advertising budget in the nation (Table 2-1). Michigan's advertising budget and its national ranking with respect to advertising budgets have both dropped in the past five years; Michigan's projected advertising budget for FY1985-86 of $4.3 million was the sixth highest in the nation (U.S. Travel Data Center, 1985).

Statistics on the media purchase portions of the projected advertising budgets of the Michigan Travel Bureau and equivalent agencies in surrounding states are presented in Table 2-2. As shown therein, Michigan's FY1990-91 media purchase budget of $3.50 million is greatly exceeded by Illinois' budget of $10.00 million, roughly the same as Wisconsin's budget of $3.53 million, and far higher than Indiana's budget of $1.10 million, Minnesota's budget of $1.09 million, and Ohio's budget of $500,000. Seventy-seven percent of Michigan's media purchase budget was allocated to television, compared to 68% of Indiana's, 46% of Minnesota's, and 27% of Illinois'. (Comparable statistics for Ohio and Wisconsin are not available). Twenty-three percent of Michigan's and Indiana's media purchase budgets were allocated to print media (newspapers and magazines), compared to 9% of Illinois' and 40% of Minnesota's. Less than 14% of the media purchase budgets of any of the four states were allocated to radio. None of Michigan's, Indiana's, or Minnesota's media purchase budgets were allocated to outdoor advertising, whereas 54% of Illinois' media purchase budget was allocated to this form of advertising.

Travel Advertising Expenditures

While it is useful to compare the budgets of the various state travel offices, these comparisons are somewhat problematic since budgets are subject to change and, in the case of the Great Lakes states, cover fiscal years which begin on different dates (Table 2-1). Consequently, it is worthwhile to also compare statistics on the actual travel advertising expenditures of each state in the U.S. on a calendar year basis. These expenditures figures, shown in Table 2-3, were compiled by Ogilvy and Mather, Inc. from Leading National Advertisers and the Arbitron Company. The latter compile and distribute statistics on advertising expenditures in specific media. For example, figures on advertising expenditures in newspapers cover 235 daily and Sunday newspapers in 73 cities.

The expenditure figures shown in Tables 2-3, 2-4, and 2-5 do not include expenditures in nonmeasured or foreign media. Comparability of 1989 figures with those of earlier years is somewhat complicated by the fact that the 1989 figures pertain to 172 general magazines, whereas in prior years coverage pertained to only 102 general magazines.

In terms of advertising expenditures in U.S. measured media, Michigan ranked fourth in the nation in 1987, third in the nation in 1988, and fifth in the nation in 1989 (Table 2-3). In 1987 Michigan's advertising expenditures were exceeded by those of New York, New Jersey, and California. In 1988 Michigan's expenditures were exceeded by those of New York and Alaska. In 1989 Michigan's expenditures were exceeded by those of New York, Virginia, Alaska, and Texas.

The travel advertising expenditures of Michigan, Illinois, Wisconsin, and Florida in 1989 by type of medium are compared in Table 2-4. As shown therein, a higher proportion of Illinois' total advertising expenditures that year were allocated to radio and a lower proportion to television than was the case with Michigan's, Wisconsin's, or Florida's advertising

Table 2-2. Breakdown of media purchase budgets of Michigan Travel Bureau and equivalent agencies in surrounding states, FY1990-91.

MEDIUM	MICHIGAN Amount	%	ILLINOIS Amount	%	INDIANA Amount	%	MINNESOTA Amount	%	OHIO Amount	%	WISCONSIN Amount	%
Television	$2,688,000	76.8	$ 2,700,000	27.0	$ 750,000	68.2	$ 500,200	45.9	N.A.	N.A.	N.A.	N.A.
Magazines	416,500	11.9	900,000	9.0	100,000	9.1	52,300	4.8	N.A.	N.A.	N.A.	N.A.
Newspapers	374,500	10.7			150,000	13.6	389,000	35.7	N.A.	N.A.	N.A.	N.A.
Radio	0	0.0	1,000,000	10.0	100,000	9.1	148,000	13.6	N.A.	N.A.	N.A.	N.A.
Outdoor	0	0.0	5,400,000	54.0	0	0.0	0	0.0	N.A.	N.A.	N.A.	N.A.
Other	21,000	0.6	0	0.0	0	0.0	0	0.0	N.A.	N.A.	N.A.	N.A.
Total	$3,500,000	100.0	$10,000,000	100.0	$1,100,000	100.0	$1,089,500	100.0	$500,000	100.0	$3,530,000	100.0

SOURCE: U.S. Travel Data Center. 1991. Survey of State Travel Offices 1990-91. Washington, D.C.: U.S. Travel Data Center. Reprinted with permission.

Table 2-3. States with travel advertising expenditures of over $300,000 in U.S. measured media, 1987-89.

1987			1988			1989		
Rank	State	Expenditures ($000)	Rank	State	Expenditures ($000)	Rank	State	Expenditures ($000)
1	NY	6,173	1	NY	6,389	1	NY	6,170
2	NJ	3,925	2	AK	4,377	2	VA	5,548
3	CA	3,820	3	■ MI	4,182[a]	3	AK	5,390
4	■ MI	3,539[a]	4	NJ	3,973	4	TX	5,018
5	TN	3,461	5	PA	3,766	5	■ MI	4,927
6	CO	3,389	6	VA	3,745	6	NJ	3,980
7	NC	2,925	7	CO	3,689	7	IL	3,287
8	IL	2,754	8	TX	3,631	8	CO	3,201
9	WI	2,586	9	NC	2,943	9	NC	3,065
10	VA	2,584	10	FL	2,847	10	TN	2,823
11	MA	2,433	11	IL	2,666	11	WI	2,576
12	PA	2,319	12	MO	2,592	12	CA	2,435
13	AK	2,307	13	CA	2,428	13	PA	2,432
14	FL	2,171	14	WI	2,190	14	FL	2,427
15	SC	1,592	15	MA	2,170	15	HI	2,403[b]
16	MO	1,208	16	TN	2,041	16	MO	1,949
17	AZ	1,133	17	HI	1,821[b]	17	MA	1,905
18	GA	1,083	18	SC	1,449	18	AZ	1,529
19	HI	898[b]	19	GA	1,324	19	GA	1,357
20	UT	759	20	AL	1,248	20	SC	1,348
21	TX	669	21	LA	1,108	21	UT	1,344
22	WY	664	22	IN	970	22	OK	1,137
23	LA	648	23	ME	909	23	KY	1,042
24	IN	644	24	UT	892	24	LA	978
25	MD	640	25	AZ	848	25	WY	697
26	RI	522	26	CT	697	26	RI	666
27	OK	500	27	WY	652	27	CT	622
28	MN	460	28	OK	616	28	IA	619
29	KY	441	29	RI	550	29	SD	615
30	WA	429	30	SD	532	30	IN	603
31	CT	412	31	OR	471	31	OR	587
32	AR	404	32	NV	456	32	AL	480
33	AL	371	33	NM	415	33	NM	465
34	NV	304	34	KY	378	34	ME	454
35	OH	302	35	MN	320	35	NV	420
						36	MN	403
						37	AR	394
						38	VT	308

[a] Includes Michigan Travel Association and Council [sic].

[b] Includes co-op advertising.

NOTE: Figures were obtained by Ogilvy and Mather from accepted media-measurement sources. Figures exclude "trade paper" advertising, cooperative advertising except where noted, and advertising in nonmeasured media. No discounts were taken into account. "Measured media" included 172 general magazines in 1989 but only 102 general magazines in earlier years.

SOURCE: Ogilvy and Mather, Inc. Trends in Travel and Tourism Advertising Expenditures in United States Measured Media, annual. New York: Ogilvy and Mather, Inc. Reprinted with permission.

Table 2-4. Travel advertising expenditures of Michigan and selected competing states in U.S. measured media, by type of medium, 1989.

Medium	Michigan[1] ($000)	Michigan[1] %	Illinois ($000)	Illinois %	Wisconsin ($000)	Wisconsin %	Florida ($000)	Florida %
Newspapers[2]	679	13.8	171	5.2	827	32.1	194	8.0
Magazines[3]	954	19.4	812	24.7	74	2.9	673	27.7
Television	2,958	60.0	1,312	39.9	1,579	61.3	1,560	64.3
Radio	336	6.8	992	30.2	96	3.7	0	0.0
Outdoor	0	0.0	0	0.0	0	0.0	0	0.0
Total	4,927	100.0	3,287	100.0	2,576	100.0	2,427	100.0

[1] Includes Michigan Travel Association and Council [sic].

[2] Figures cover 235 daily and Sunday newspapers in 73 cities.

[3] Figures cover 172 general magazines.

NOTE: Figures were obtained by Ogilvy and Mather from accepted media-measurement sources. Figures exclude "trade paper" advertising, cooperative advertising, and advertising in nonmeasured media. No discounts are taken into account. Figures for IN, OH, and MN were not shown in source.

SOURCE: Ogilvy and Mather, Inc. 1990. Trends in Travel and Tourism Advertising Expenditures in U.S. Measured Media 1985-1989. New York: Ogilvy and Mather, Inc. Reprinted with permission.

expenditures. Also, Wisconsin allocated a higher share of its advertising expenditures on newspapers and a lower share on magazines than the other states represented in the table.

Ontario's Travel Advertising

Ontario is one of Michigan's major competitors for travel expenditures. While information on Ontario's promotion and advertising budgets and programs of course cannot be obtained from the USTDC's *Survey of State Travel Offices*, some information (albeit less timely) on Ontario advertising efforts can be gleaned from the Ogilvy and Mather reports described above.

Ontario's advertising expenditures in U.S. measured media totaled $4.8 million in 1989 (U.S. dollars), slightly below the $4.9 million spent by Michigan in U.S. measured media that year (Tables 2-3 and 2-5). This is a marked reversal of the situation in 1984, during which Ontario spent $5.7 million in U.S. measured media, or more than twice the $2.5 million spent by Michigan (Ogilvy and Mather, 1985:IV-4).

Ontario's advertising expenditures in U.S. measured media declined steadily from $5.7 million in 1984 to $3.8 million in 1988, and then increased to $4.8 million in 1989 (Table 2-5). A major shift between 1988 and 1989 is evident in the province's allocation of expenditures from newspapers and magazines to television and especially radio, even though "measured media" covered more magazines in 1989 than in previous years.

Travel Advertising at Highway Welcome Centers

Travel advertising in Michigan involves not only enticing people to choose Michigan as a travel destination, but also encouraging them to increase their length of stay and expenditures once they are in the state. Highway welcome centers in Michigan play an important role in this regard by providing travelers with information on specific attractions and accommodations in Michigan. These centers, operated by the Michigan Department of Transportation, provide free literature and other services to travelers. There are presently 13 highway welcome centers in Michigan situated at the principal entrances to the state and at strategic interior locations (Figure 2-1).

Estimated visitation to each of the centers in 1990 is shown in Table 2-6. These statistics are the product of an improved counting system that was initiated in 1989. Consequently, they are *not comparable* to the welcome center counts that were published in Table 3-8 of the first edition of this book.

The number of pieces of literature distributed at the centers increased from 200,000 in 1962 to 9.6 million in 1990 (Table 2-7). Much of this growth of course resulted from increases in the number of centers in operation during this period.

Table 2-5. Travel advertising expenditures of the province of Ontario in U.S. measured media, 1984-89.

Medium	1984		1985		1986		1987		1988		1989	
	Expenditures (U.S. $000)	%	Expenditures (U.S. $000)	%	Expenditures (U.S. $000)	%	Expenditures (U.S. $000)	%	Expenditures (U.S. $000)	%	Expenditures (U.S. $000)	%
Newspapers[1]	2,139	37.6	3,273	60.1	2,484	57.0	1,895	48.1	1,912	50.3	42	0.9
Magazines[2]	2,196	38.6	1,579	29.0	1,024	23.5	1,026	26.1	734	19.3	331	6.9
Television	1,224	21.5	520	9.6	850	19.5	1,011	25.7	1,081	28.4	1,559	32.7
Radio	130	2.3	69	1.3	0	0.0	0	0.0	63	1.7	2,831	59.4
Outdoor	0	0.0	0	0.0	0	0.0	3	0.1	10	0.3	0	0.0
Total	5,689	100.0	5,441	100.0	4,358	100.0	3,935	100.0	3,800	100.0	4,763	100.0

[1] Figures cover 235 daily and Sunday newspapers in 73 cities.

[2] Figures cover 172 general magazines in 1989 and 102 general magazines in earlier years.

NOTE: Figures were obtained by Ogilvy and Mather from accepted media-measurement sources. They exclude "trade paper" advertising, cooperative advertising, and advertising in nonmeasured media. No discounts are taken into account. Details may not add to totals due to rounding error.

SOURCE: Ogilvy and Mather, Inc. Trends in Travel and Tourism Advertising Expenditures in United States Measured Media, annual. New York: Ogilvy and Mather, Inc. Reprinted with permission.

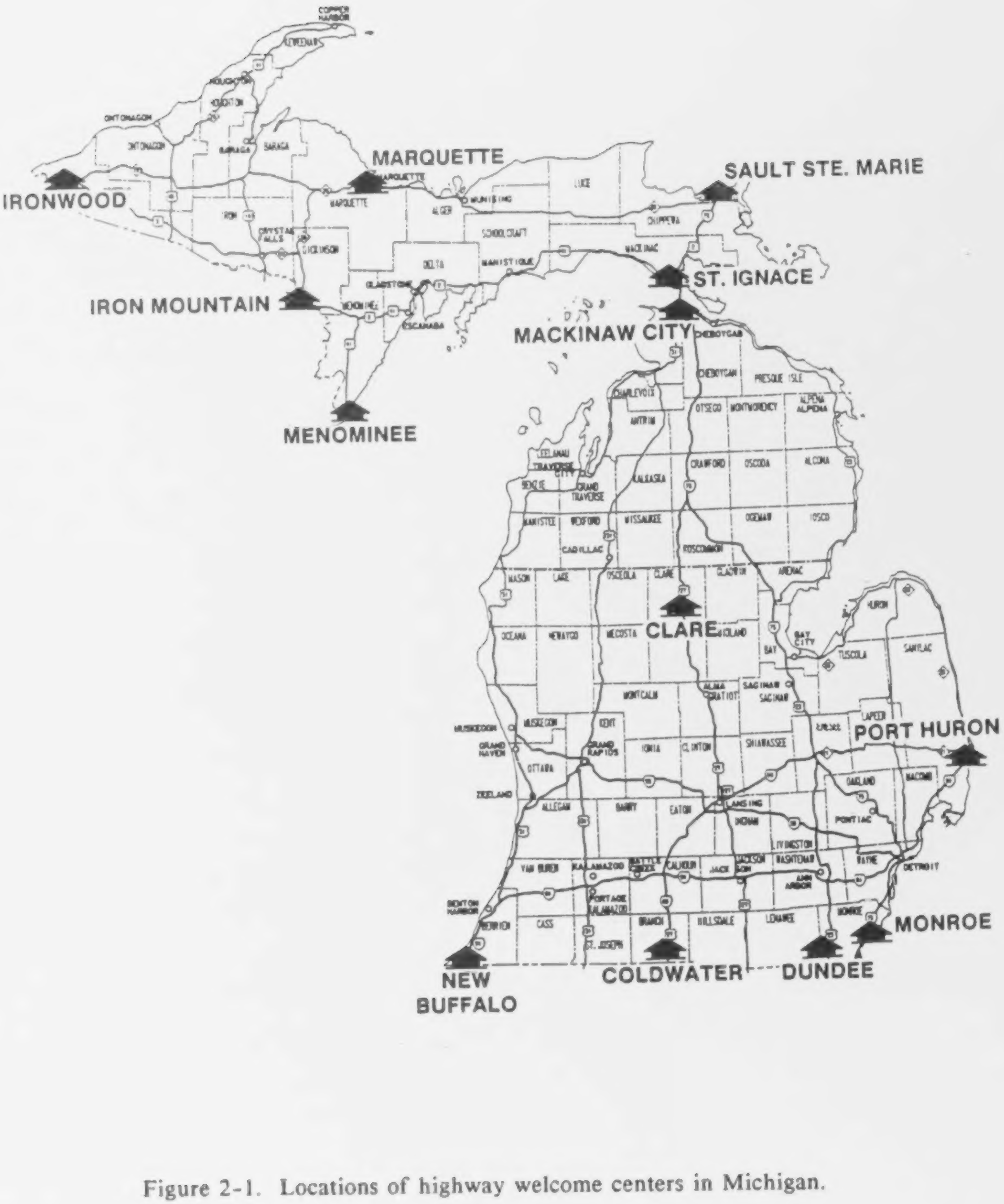
IRONWOOD
MARQUETTE
SAULT STE. MARIE
ST. IGNACE
IRON MOUNTAIN
MACKINAW CITY
MENOMINEE
CLARE
PORT HURON
MONROE
NEW BUFFALO
COLDWATER
DUNDEE

Figure 2-1. Locations of highway welcome centers in Michigan.

SOURCE: Michigan Department of Transportation.

Table 2-6. Estimated number of visits to Michigan's highway welcome centers, by month, 1990.

WELCOME CENTER	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Clare	96,444	97,318	115,848	135,207	168,045	188,532	263,857	236,144	176,382	151,299	128,657	91,705	1,849,438
Coldwater	50,357	47,954	66,417	79,976	88,095	96,654	103,879	103,785	81,650	73,191	64,095	57,302	913,355
Dundee	48,618	51,497	67,335	84,801	110,745	110,646	122,952	124,545	103,866	80,662	67,043	65,448	1,038,158
Iron Mountain	3,538	3,787	4,413	4,758	6,337	8,714	15,817	14,913	8,077	6,216	3,431	3,160	83,161
Ironwood	7,614	6,579	8,583	10,035	13,224	19,944	31,365	29,216	18,786	12,579	8,283	6,669	172,877
Mackinaw City	12,050	12,341	15,330	19,442	31,187	48,181	77,546	74,819	46,788	28,479	12,906	13,591	392,660
Marquette	3,863	3,693	4,514	5,869	8,707	12,630	21,775	20,898	13,848	8,923	5,032	3,696	113,448
Menominee	3,223	2,975	4,217	5,148	7,271	12,074	17,274	16,218	10,978	6,903	3,888	3,294	93,463
Monroe	95,202	92,129	124,605	138,312	138,742	149,890	169,889	175,278	132,561	125,525	114,712	115,346	1,572,191
New Buffalo	N.A.	N.A.	N.A.	109,352	143,278	166,220	222,304	226,260	183,400	N.A.	N.A.	102,081	N.A.
Port Huron	17,010	15,857	22,088	24,267	32,386	39,371	53,989	53,368	35,280	29,513	22,137	17,709	362,975
Sault Ste. Marie	10,616	10,386	14,053	12,522	16,394	23,074	37,678	36,274	21,988	14,393	8,564	9,182	215,124
St. Ignace	9,371	10,170	12,185	16,996	27,756	42,786	64,918	63,555	43,421	24,262	17,479	10,889	343,788
Total	N.A.	N.A.	N.A.	646,693	792,172	918,722	1,203,250	1,175,278	877,031	N.A.	N.A.	500,076	N.A.

NOTE: Iron Mountain center uses a floor mat counter; the actual count is halved. All other centers use electronic vehicle counters and then apply a multiplier of 2.7 persons per vehicle. January through Merch figures for Sault Ste. Marie center were halved due to snow plowing procedure. December figure for New Buffalo center pertains to a new building which opened on November 3. Due to new estimation procedures, figures are not comparable to those that appeared in Table 3-8 of the first edition of this book.

SOURCE: Michigan Department of Transportation, Travel Information Division.

Table 2-7. Number of pieces of literature distributed at Michigan's highway welcome centers, 1962-90.

YEAR	NO. PIECES DISTRIBUTED	NOTES
1962	200,000	
1963	1,500,000	
1964	2,064,000	Monroe center opened replacing 1941 "station"; Ironwood center opened.
1965	2,531,000	Sault Ste. Marie center opened.
1966	2,326,000	
1967	2,517,000	Port Huron center opened.
1968	2,703,000	Clare Center opened.
1969	2,690,000	Coldwater center opened.
1970	2,949,000	
1971	3,089,000	New Buffalo center opened, replacing 1935 "station."
1972	3,490,000	
1973	3,411,758	
1974	3,193,664	
1975	3,113,233	
1976	3,778,898	
1977	4,187,765	
1978	3,940,637	Dundee center opened.
1979	5,389,465	
1980	4,810,047	
1981	4,871,907	
1982	4,572,861	
1983	4,879,837	
1984	5,404,595	Iron Mountain center opened.
1985	5,415,434	
1986	4,455,309	
1987	5,452,879	
1988	8,166,993	St. Ignace center opened.
1989	6,829,869	Marquette center opened.
1990	9,572,760	

SOURCE: Michigan Department of Transportation, Travel Information Division.

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CHAPTER 3

CHARACTERISTICS OF MICHIGAN'S TRAVEL MARKET

Donald F. Holecek

Introduction

Many of the other chapters in this book deal with the characteristics and behavior of specific types of travelers, such as boaters, campers, or B&B patrons. While this information is quite useful when one is seeking to attract these specific types of individuals, it is advantageous to evaluate and use such information in the context of Michigan's overall travel market. This chapter provides such an overview, drawing upon a compilation of the best available information on this subject. It should be emphasized at the outset, however, that the quality of this information is far from optimal. Readers are strongly encouraged to carefully consider the limitations noted in the text as they interpret the statistics provided.

The chapter begins with a brief history of comprehensive travel market research in Michigan to assist readers seeking baseline information not presented herein and to help explain why some obviously important information does not exist. This is followed by discussions of the characteristics of Michigan's prime market population and the results of two relatively recent travel surveys which documented the characteristics of Michigan's overall travel market and of Michigan's pleasure travel market as a subset of this overall market.

History of Travel Market Research in Michigan

Developing a reliable composite overview of travel in Michigan is a major research undertaking. It is very expensive and presents formidable methodological challenges. Although the results have broad utility, no simple mechanism has emerged for sharing the costs of such research across many thousands of potential users. This explains why the only comprehensive Michigan travel research studies have been funded by government agencies. The results of these studies are useful for many purposes, but inconsistencies across studies significantly limit comparability. Moreover, their wide dissemination has not been a priority for the agencies involved. In the main, the studies have been conducted to address current internal agency needs for specific types of information. Creating and funding a comprehensive and reliable on-going research program to assess the characteristics of and trends in Michigan's travel market remains one of the most worthwhile objectives for government and the travel industry to achieve.

Possibly the most useful and relevant comprehensive travel study available is the U.S. Bureau of the Census' National Travel Survey, last conducted in 1977 (U.S. Bureau of the Census, 1979). The data from this study were further analyzed by the U.S. Travel Data Center and Riley Systems, Inc. for Better Homes and Gardens (U.S. Travel Data Center and Riley Systems, n.d.). This partnership of government and the private and non-profit sectors represents a successful model for dealing with the costs and complexities of such research. The results of this study were particularly useful because they estimated the number of person-nights of travel to and through a given state that originated in each of the other states in the U.S., thus documenting the proportion of that state's market which originated from out-of-state in general and from certain key states in particular. Unfortunately, these 1977 statistics are now quite dated, and there are no definite plans to update this study. It is not reasonable for a single state to conduct a nationwide travel study, which today must survey foreign visitors as well, and a cost-sharing arrangement among the states would be almost impossible to arrange. Without leadership at the national level, the probability of an updated National Travel Survey is not high.

Another possibility is emerging which offers the potential for states to gain an overview of their travel markets in the broader national and international contexts. Several private research and consulting firms regularly conduct surveys of consumers which include questions on their travel activity and plans. The resulting data bases contain information similar to that developed in the 1977 National Travel Survey. These data and analysis services are available for purchase. The cost can be substantial, especially if extensive analysis is required, since these firms attempt to pro-rate the substantial costs of data collection and management over an often small customer base. These firms are in the business of selling information for profit, hence most strictly limit distribution of the information they provide and are reluctant to provide detailed insight into their overall data collection, management, and analysis systems. Were they to function otherwise, the basis for their business could be significantly undermined. In addition to relatively high access costs and significant limitations on use, these privately-owned data bases may pose other problems for some forms of analysis. For example, even a large national sample of travelers would contain only a small percentage who visited Michigan and probably only a handful who visited a particular region in Michigan. In other cases, the items in the questionnaire or the process used to select respondents may not be ideally suited for some uses. Clearly there are limits to the utility of these privately owned data bases; however, their availability presents options which merit further consideration.

State of Michigan agencies have supported major travel surveys which fall considerably short of providing the data contained in the 1977 National Travel Survey. In particular, only the latter provides the information required to assess total U.S. travel and what share Michigan captures. State agency-funded travel research studies are nonetheless useful for many purposes. The history of such studies dates to the early 1960s with research conducted by the Michigan Department of Transportation. Later, studies were conducted by Market Opinion Research and National Family Opinion in the 1970s and early 1980s under the sponsorship of the Michigan Travel Bureau. These studies are cited in the bibliography accompanying this chapter but will not be discussed here because they are outdated for most uses.

Two more recent studies funded by the Michigan Travel Bureau were the principal sources used in developing this chapter. Both studies were conducted to generate information in support of the Bureau's travel promotion programs. One was conducted by the U.S. Travel Data Center (USTDC) in 1985 based on data from its monthly national household survey. The second was conducted in 1984-86 by Ross Roy Inc., then under contract as the Bureau's advertising agency.

Characteristics of Michigan's Prime Market Population

According to the USTDC (1985), 86% of all person-trips to and through Michigan originated in Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, or Wisconsin. Therefore, these states can be considered Michigan's prime market area. A good source of statistics to characterize this market area is the annual "Survey of Buying Power" conducted by *Sales & Marketing Management* magazine. The latter yields estimates of the population, income, and retail sales of each of the 50 states and their constituent counties and cities.

While population growth in the prime market area since 1980 has been below the national average, the region retains a significant share of the U.S. population. At the end of 1988, it was home to an estimated 49.5 million people, or 20% of the total estimated population of the U.S. Chicago is the most populous metropolitan area in the region, followed by Detroit, Minneapolis/St. Paul, Cleveland, Cincinnati, Milwaukee, Columbus, Indianapolis, and Des Moines (Table 3-1).

Effective Buying Income (EBI) is a proprietary term of *Sales and Marketing Management* which denotes personal income less personal tax and non-tax payments, a value often referred to as "disposable" or "after-tax" income. Generally speaking, EBI is a bulk measurement of market potential which represents consumers' purchasing power. The prime market area represents 19% of total U.S. EBI. The average household EBI in the region ($31,964) is somewhat below that of the U.S. as a whole ($33,198). The distribution of EBI in the region (Table 3-1) closely follows that of population in the region.

These statistics demonstrate that Michigan is located within a day's drive of a vast number of people with discretionary incomes sufficient to take at least one vacation as well as several shorter trips each year. And because the majority (74%) of these people live in metropolitan areas, they can be easily exposed to promotional messages through newspapers, radio, television, and other media.

Overall Travel To and Through Michigan

The characteristics of domestic travel in Michigan as revealed by the USTDC study mentioned above are presented in Tables 3-2 and 3-3. In the study respondents to the Center's monthly nationwide telephone survey on travel activity who had recently traveled to Michigan or had taken a trip that involved an overnight stay in Michigan were singled out for analysis. To obtain sufficient cases for analysis, the Center pooled such respondents from its 1983 and 1984 surveys.

Travel to and through Michigan was defined as any trip taken by an adult U.S. resident to a destination in Michigan, or any trip during which one or more nights were spent in Michigan. A trip was defined as travel to a place 100 miles or more away from home, whether or not an overnight stay was involved. This definition does not include travel which involved one-way distances of less than 100 miles, or travel over 100 miles in length which did not involve an overnight stay in Michigan or travel to a destination in Michigan. Therefore, the statistics in Tables 3-2 and 3-3 should not be construed as representative of all travel in Michigan. It is perhaps most reasonable to consider these statistics to be generally representative of overnight travel in Michigan since only 7% of the trips upon which the results are based were day trips. A further limitation is the relatively small sample size of 282 respondents who had taken 543 trips. Despite the above difficulties, these findings provide at least a basic profile of the character of travel and travelers in Michigan and are the only reasonably current statistics of this kind available.

Characteristics of Trips To and Through Michigan

The "main activity" of 38% of the trips was visiting friends or relatives (Table 3-2). "Other pleasure" was the main purpose of an additional 38% of the trips, and business or attending a convention was the main purpose of only 14% of the trips. Two-thirds (66%) of the trips were vacations, and two-thirds (65%) occurred between April 1 and October 1. Fifty-one percent of the trips occurred on weekends.

Eighty-three percent of the trips involved the use of an automobile, truck, or recreation vehicle (RV). Only 10% of the trips were by plane; only 6% were by bus; and only 2% involved renting a car. Only 5% of the trips were package tours, and only 6% were preceded by consultation with a travel agent.

Table 3-1. Distribution of estimated population and effective buying income in Michigan's prime market area, 1988.

State	Population (000)	%	Effective Buying Income (000)	%
ILLINOIS				
Chicago	6,203.1	13	$ 87,161,650	15
Other metropolitan areas	3,409.7	7	43,691,258	7
Non-metropolitan areas	2,061.5	4	21,536,091	4
Subtotal	11,674.3	24	$152,388,999	26
INDIANA				
Indianapolis	1,243.4	2	$ 15,123,770	3
Other metropolitan areas	2,558.2	5	27,886,444	5
Non-metropolitan areas	1,795.6	4	17,521,789	3
Subtotal	5,597.2	11	$ 60,532,003	10
IOWA				
Des Moines	389.1	1	$ 4,988,424	1
Other metropolitan areas	838.7	2	9,941,794	2
Non-metropolitan areas	1,619.6	3	15,717,778	3
Subtotal	2,847.4	6	$ 30,647,996	5
MICHIGAN				
Detroit	4,396.4	9	$ 56,788,300	10
Other metropolitan areas	3,065.5	6	36,054,184	6
Non-metropolitan areas	1,873.4	4	17,824,511	3
Subtotal	9,335.3	19	$110,666,995	19
MINNESOTA				
Minneapolis/St. Paul	2,377.2	5	$ 35,180,256	6
Other metropolitan areas	486.4	1	5,371,943	1
Non-metropolitan areas	1,463.2	3	13,267,801	2
Subtotal	4,326.8	9	$ 53,820,000	9
OHIO				
Cleveland	1,853.9	4	$ 23,343,482	4
Cincinnati	1,442.7	3	18,008,429	3
Columbus	1,334.9	3	15,944,059	3
Other metropolitan areas	3,935.8	8	45,009,335	8
Non-metropolitan areas	2,328.8	5	22,963,691	4
Subtotal	10,896.1	22	$125,268,996	21
WISCONSIN				
Milwaukee	1,401.3	3	$ 18,616,645	3
Other metropolitan areas	1,837.3	4	22,658,635	4
Non-metropolitan areas	1,631.0	3	16,409,716	3
Subtotal	4,869.6	10	$ 57,684,996	10
GRAND TOTAL	49,546.7	100	$591,009,985	100

NOTE: Effective Buying Income (EBI) is a proprietary term of Sales and Marketing Management which denotes personal income less personal tax and non-tax payments, a value often referred to as "disposable" or "after-tax" income. Generally speaking, EBI is a bulk measurement of market potential which represents consumers' purchasing power.

SOURCE: Sales & Marketing Management. 1989. "1989 Survey of Buying Power." 141(10).

Table 3-2. Characteristics of domestic travel to and through Michigan, 1983-1984.

	TRIPS	PERSON-TRIPS
MAIN ACTIVITY OF TRIP		
Visit friends/relatives	38%	41%
Other pleasure	38	38
Business	10	6
Convention	4	3
Other	11	11
Total	100%	100%
VACATION TRIP		
Yes	66%	69%
No	34	31
Total	100%	100%
QUARTER OF YEAR		
January-March	12%	9%
April-June	25	30
July-September	40	39
October-December	24	21
Total	100%	100%
WEEKEND TRIP		
Yes	51%	54%
No	49	46
Total	100%	100%
MODE OF TRANSPORTATION		
Auto/truck/RV	83%	89%
Airplane	10	7
Bus	6	4
Train	*	*
Other	*	*
Total	100%	100%
RENTED CAR		
Yes	2%	2%
No	98	98
Total	100%	100%
PACKAGE TOUR		
Yes	5%	3%
No	95	97
Total	100%	100%
USE OF TRAVEL AGENT		
Consulted agent for hotel/transportation reservations	4%	3%
Consulted agent for some other purpose	2	1
Did not consult a agent	94	96
Total	100%	100%

Table 3-2. Characteristics of domestic travel to and through Michigan, 1983-1984 (continued).

	TRIPS	PERSON-TRIPS
ORIGIN REGION		
New England (CT, ME, MA, NH, RI, VT)	*%	*%
Eastern Gateway (NJ, NY)	2	2
George Washington Country (DE, DC, MD, PA, VA, WV)	4	4
The South (AL, AR, FL, GA, KY, LA, MS, NC, SC, TN)	6	4
Great Lakes Country (IL, IN, IA, MI, MN, OH, WI)	83	86
Mountain West (CO, MT, NE, ND, SD, UT, WY)	*	*
Frontier West (AZ, KS, MO, NM, OK, TX)	3	2
Far West (CA, ID, NV, OR, WA)	1	1
Total	100%	100%
AREA OF RESIDENCE		
Large Metropolitan Statistical Area	50%	48%
Small Metropolitan Statistical Area	40	42
Non-Metropolitan Statistical Area	10	10
Total	100%	100%
AREA OF DESTINATION		
Large Metropolitan Statistical Area	22%	23%
Small Metropolitan Statistical Area	28	25
Non-Metropolitan Statistical Area	46	50
Outside contiguous U.S.	4	3
Total	100%	100%
ROUND TRIP DISTANCE (INCLUDING MILEAGE OUTSIDE MICHIGAN)		
200-299 miles	25%	26%
300-399 miles	20	24
400-599 miles	22	25
600-999 miles	21	17
1000-1999 miles	5	4
2000 miles or more	3	2
Outside contiguous U.S.	4	3
Total	100%	100%
Average	540 miles	510 miles
TRIP DURATION		
No nights	7%	8%
One night	11	12
2-3 nights	47	47
4-9 nights	25	24
10 nights or more	10	9
Total	100%	100%
AVERAGE DURATION OF TRIPS[1]		
All nights on trip, including those outside Michigan	4.7 nights	4.5 nights
Only nights spent in Michigan	4.1 nights	4.0 nights
TYPE OF LODGING USED[2]		
Home of friends/relatives	43%	43%
Hotel/motel/motor hotel	30	28
Rented cabin/condo/vacation home	2	2
Owned cabin/condo/vacation home	7	8
Camper/RV/tent	11	15
Other	2	1
No nights	7	8

Table 3-2. Characteristics of domestic travel to and through Michigan, 1983-1984 (continued).

	TRIPS	PERSON-TRIPS
SIZE OF TRAVEL PARTY		
One	38%	19%
Two	38	37
Three	14	21
Four	6	12
Five or more	3	10
Total	100%	100%
Average	2.03 persons	
COMPOSITION OF TRAVEL PARTY		
One adult without children	38%	19%
Two or more adults, without children	40	42
One adult with children	7	10
Two or more adults, with children	15	28
Total	100%	100%

*Less than .5 percent.

[1] Includes day trips.

[2] Includes all accommodations on trip, including those used outside Michigan. Details add to greater than 100% due to multiple responses.

NOTE: Details may not add to 100% due to rounding error. Base = 543 trips. See discussion of study methods and limitations in text.

SOURCE: U.S. Travel Data Center. 1985. Travel To and Through Michigan 1983-84. Special study prepared for the Michigan Travel Bureau. Washington, D.C.: U.S. Travel Data Center.

Table 3-3. Characteristics of domestic travelers to and through Michigan, 1983-84.

MARITAL STATUS	
Married	70%
Single, never married	20
Separated	1
Divorced	4
Widowed	5
Total	100%
EDUCATION	
Less than high school	8%
High school complete	28
College incomplete	22
College complete	25
Graduate work	17
Total	100%
GENDER	
Male	45%
Female	55
Total	100%
OCCUPATION OF RESPONDENT	
Professional/managerial, etc.	15%
Lower level technical/managerial	15
Clerical	21
Blue Collar	17
Household service	2
Retired	13
Unemployed	3
Not working, not looking	13
Other	1
Total	100%
HOME	
Own	73%
Rent	26
Total	100%
AGE[1]	
18-24 years	13%
25-34 years	31
35-44 years	21
45-54 years	14
55-64 years	14
65 and over	8
Total	100%
REGION OF RESIDENCE	
New England (CT, ME, MA, NH, RI, VT)	1%
Eastern Gateway (NJ, NY)	3
George Washington Country (DE, DC, MD, PA, VA, WV)	5
The South (AL, AR, FL, GA, KY, LA, MS, NC, SC, TN)	4
Great Lakes Country (IL, IN, IA, MI, MN, OH, WI)	81
Mountain West (CO, MT, NE, ND, SD, UT, WY)	1
Frontier West (AZ, KS, MO, NM, OK, TX)	4
Far West (CA, ID, NV, OR, WA)	2
Total	100%
HOUSEHOLD STRUCTURE	
One adult	16%
Single adult with child	4
Two or more adults	45
Two or more adults with child	35
Total	100%

Table 3-3. Characteristics of domestic travelers to and through Michigan, 1983-84 (continued).

HOUSEHOLD SIZE	
One person	16%
Two persons	36
Three persons	20
Four persons	15
Five persons	13
Total	100%
NUMBER OF WAGE EARNERS	
None	16%
One	38
Two	40
Three or more	8
Total	100%
INCOME[1]	
Less than $10,000	9%
$10,000- $19,999	26
$20,000- $29,999	27
$30,000- $39,999	20
$40,000 or more	17
Total	100%
CREDIT CARDS[2]	
Visa	44%
Mastercard	34
American Express	18
Carte Blanche	*
Diners' Club	1
None of the above	29

*less than 5 percent.

[1] Adjusted for non-response.

[2] Details add to greater than 100% due to multiple responses.

NOTE: Details may not add to 100% due to rounding error. Base = 282 respondents. See discussion of study methods and limitations in text.

SOURCE: U.S. Travel Data Center. 1985. Travel To and Through Michigan 1983-84. Special study prepared for the Michigan Travel Bureau. Washington, D.C.: U.S. Travel Data Center.

Eighty-three percent of the trips originated in the prime market area as defined above; 90% originated in either a large or small metropolitan statistical area; 50% of the trips were destined for either a large or small metropolitan statistical area. The latter finding seems to correspond with the fact that the purpose of 52% of the trips was visiting friends or relatives, business, or attending a convention. The relatively high popularity of non-metropolitan area destinations (46% of trips to Michigan) is likely linked to the attractive natural amenities in Michigan's hinterland.

Two-thirds (67%) of the trips involved round-trip travel of less than 600 miles. The average length of stay in Michigan was 4.1 nights. Forty-three percent of the trips involved lodging with friends or relatives; 30% involving staying at a hotel or motel; 11% involved staying in a camper, RV, or tent; 9% involved staying in an owned or rented cabin, condominium, or vacation home; and 2% involved staying in some other type of lodging. On the average, the parties on these trips consisted of only 2 persons. Children were present on only 22% of the trips.

Characteristics of Travelers To and Through Michigan

Compared to the Michigan population as a whole, travelers to and through Michigan were generally more mature, better educated, and had somewhat higher incomes. Seventy percent were married; 64% had at least some college education; 73% owned their own home; and 57% were 35 or older (Table 3-3). Thirty-seven percent of the travelers reported incomes of $30,000 or more, while only 32% of Michigan households in 1983 earned $30,000 or more (based on an analysis of the March 1984 Current Population Survey tapes).

Characteristics of Pleasure Travel To and Through Michigan

As noted earlier, the Michigan Travel Bureau initiated a second study in the mid-1980s through its advertising agency, Ross Roy, Inc., to assess Michigan's travel market. The purpose of this "Great Lakes Travel Monitor" study was to continuously survey pleasure travelers in Michigan's principal market area to obtain information with which to develop and evaluate promotion strategies.

An extensive survey was designed and administered by telephone. The sample was a random-digit-dial sample of households in Areas of Dominant Influence (ADIs) in Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin, southeastern Ontario, and western Pennsylvania. ADIs are broadcast media market areas delineated by county lines. The sample was a proportionate sample stratified by ADI. It was purchased from Survey Sampling, Inc.

Respondents were required to be active in the household's travel planning and to have taken a pleasure trip of over 100 miles one-way or involving an overnight stay within the last 12 months. The unit of analysis was a pleasure trip.

Interviewing for the results presented below took place after 5 p.m. or on weekends between October 1984 and May 1986, and covered travel from October 1983 through May 1986. According to a critique of the study by Market Opinion Research (1989:6), 6,031 interviews were conducted during this period. Interviewing was not evenly conducted across months, and two gaps in interviewing occurred between May 1985 and July 1985 and between November 1985 and February 1986. The response rate was not reported in any of the reports emerging from the study.

Compared to the USTDC study discussed above, the Ross Roy study produced much more comprehensive data from a much larger number of households making Michigan trips. However, this study's results also must be used very judiciously because of limitations. The most significant limitations are discussed below, and more detail is provided in the Market Opinion Research report (1989).

1. Since respondents were queried about trips taken up to 12 months earlier, the probability of recall bias in responses is relatively high.
2. Failure to employ a random selection or quota technique in selecting respondents within households resulted in interviewing a disproportionately high number of females and hence a female bias in the data.
3. The focus on ADIs resulted in an urban resident bias since ADIs exclude rural areas located far from major cities.
4. Information was collected only about the four most recent pleasure trips involving travel over 100 miles one-way or an overnight stay, thus excluding short trips and day trips.
5. The telephone interview was relatively long, which resulted in a high termination rate and increased the probability of non-response bias.
6. Interviewing took place over a multi-year time period during which changes in travel behavior and market characteristics may have occurred.
7. The study did not use the same definitions as does the USTDC, so results on travel volume and behavior are not comparable to nationwide and regional findings on these phenomena reported by the USTDC.

The statistics in the summary tables which follow were gleaned from a report by Ross Roy, Inc. (1986). They should not be considered fully representative of pleasure trips to and through Michigan. However, these statistics are the only recent estimates available for some characteristics of Michigan's pleasure travel market, and the probable biases noted are not prohibitive in the case of all applications. The key to the effective use of these statistics lies in recognizing: (1) the role of the above limitations in deciding when their application is appropriate, and (2) how these limitations may affect resulting estimates. In general, the results can be more confidently employed in examining relationships between variables than in estimating population parameters.

General Characteristics of Pleasure Travel To and Through Michigan

Pleasure trips to or through Michigan were generally taken by mature, well educated people who had higher incomes than the general population of Michigan. Fifty-seven percent of the trips included persons who were 35 or older, 73% included individuals who were married, and 62% included individuals who had at least some college education (Table 3-4). Moreover, 50% of the trips included individuals who reported incomes of $30,000 or more, whereas only 32% of Michigan households in 1983 had incomes in this range (according to an analysis of the March 1984 Current Population Survey tapes).

The recreation activities most likely to be considered of interest when on pleasure trips by those who visited Michigan on such trips were: fishing (of all types) (23%), swimming (22%), boating/canoeing/water skiing (18%), hiking/backpacking (14%), and camping (6%) (Table 3-4).

Table 3-4. Characteristics of pleasure trips to Michigan versus surrounding states, October 1983 through May 1986.

	REGION AS A WHOLE	DESTINATION							
		MI	WI	MN	IL	IN	OH	PA[1]	ONT[1]
AGE	N=3999	N=844	N=563	N=294	N=424	N=317	N=602	N=290	N=665
18-24	14%	14%	12%	15%	14%	11%	15%	12%	17%
25-34	31	29	36	35	33	23	30	31	33
35-44	24	27	23	20	21	31	27	20	21
45-54	13	12	12	12	11	15	12	16	13
55-64	12	13	11	11	12	14	11	13	11
65 or older	6	5	6	7	9	6	5	8	5
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
MARITAL STATUS	N=4089	N=869	N=571	N=294	N=439	N=323	N=610	N=300	N=685
Married	69%	73%	71%	69%	61%	70%	72%	71%	66%
Not married	31	27	29	31	39	30	28	29	34
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
EDUCATION	N=4026	N=857	N=567	N=292	N=431	N=317	N=600	N=299	N=663
Did not complete high school	6%	5%	7%	7%	5%	6%	7%	5%	8%
Completed high school	32	33	32	25	28	40	32	41	28
Attended college	29	32	30	30	32	28	27	22	30
Completed college	33	30	31	38	35	26	34	32	34
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
HOUSEHOLD INCOME	N=3064	N=630	N=437	N=223	N=310	N=259	N=474	N=218	N=513
Under $10,000	7%	6%	7%	11%	11%	5%	6%	9%	5%
$10,000-$19,999	16	15	14	16	18	16	19	17	13
$20,000-$29,999	27	29	31	23	26	30	24	25	22
$30,000 or more	50	50	48	50	45	48	52	48	60
$40,000 or more	28	26	24	26	25	29	31	25	34
$50,000 or more	14	14	12	12	13	13	17	16	17
ACTIVITIES OF INTEREST WHEN ON A PLEASURE TRIP	N=3315	N=704	N=475	N=243	N=359	N=246	N=494	N=236	N=559
Swimming	20%	22%	22%	17%	12%	18%	19%	19%	23%
Lake fishing	12	16	19	18	4	5	6	7	14
Hiking/backpacking	13	14	18	14	6	14	9	16	15
Power boating	6	8	9	5	2	3	4	6	9
Camping	6	6	8	7	2	4	7	7	4
Sunbathing	4	5	3	2	2	2	4	1	6
Bicycling	3	5	4	2	3	1	2	2	2
Golf	4	4	6	3	4	4	3	6	2
Stream/river fishing	3	4	6	1	1	0	2	3	4
Water skiing	2	4	4	4	1	2	1	0	4
Hunting	2	4	4	1	1	0	1	1	2
Canoeing	3	3	5	5	2	0	1	1	5
Tennis	2	3	2	1	1	2	2	3	3
Horseback riding	2	3	1	0	1	3	2	2	1
Sailing	1	3	1	2	1	0	0	0	2
Cross-country skiing	1	2	2	2	0	0	0	1	1
Downhill skiing	1	2	2	0	0	2	0	0	1
Charter boat fishing	1	2	1	1	0	1	0	0	1
Snowmobiling	1	2	2	1	0	1	0	0	1
Ice fishing	0	1	1	1	0	0	1	0	1
Rafting	0	0	1	0	0	0	0	1	1
Miscellaneous sports	6	7	4	7	8	6	8	5	5

Table 3-4. Characteristics of pleasure trips to Michigan versus surrounding states, October 1983 through May 1986 (continued).

	REGION AS A WHOLE	DESTINATION MI	WI	MN	IL	IN	OH	PA[1]	ONT[1]
AGREEMENT THAT "THE BEST VACATIONS ARE THOSE WHICH. . ."[2]	N=4073	N=858	N=573	N=294	N=437	N=321	N=606	N=297	N=684
Let me escape from my daily routine	4.5	4.6	4.5	4.4	4.4	4.5	4.5	4.4	4.4
Make lasting memories and impressions	4.5	4.5	4.6	4.5	4.6	4.6	4.5	4.5	4.6
Take me places I've never been before	4.4	4.4	4.4	4.3	4.4	4.4	4.4	4.4	4.4
Bring new experiences	4.3	4.3	4.4	4.2	4.4	4.3	4.4	4.4	4.3
Take me to places away from home	4.3	4.3	4.2	4.1	4.3	4.3	4.3	4.2	4.3
Give me a chance to rest	4.1	4.1	4.1	4.0	4.1	4.0	4.1	4.1	4.0
Let me return to nature	4.0	4.1	4.2	4.0	3.9	4.0	4.0	3.9	3.9
Help me meet lots of new people	3.5	3.3	3.4	3.4	3.5	3.5	3.6	3.7	3.6
Keep me busy all the time	3.3	3.3	3.3	3.1	3.2	3.3	3.4	3.3	3.3
Let me do things as when a kid	3.1	3.1	3.3	3.1	2.9	3.2	3.2	3.0	3.0
Let me live in luxury	3.0	2.9	2.9	2.9	3.1	3.1	3.1	3.1	3.0
IMPORTANCE OF VARIOUS ATTRIBUTES WHEN TRAVELING[3]	N=4095	N=871	N=576	N=295	N=438	N=320	N=610	N=299	N=686
Good scenery	4.4	4.4	4.4	4.4	4.3	4.4	4.3	4.4	4.4
Friendly people	4.4	4.4	4.4	4.4	4.4	4.5	4.4	4.4	4.5
Good places to stay	4.4	4.3	4.3	4.3	4.4	4.4	4.4	4.4	4.3
Reasonable prices	4.3	4.3	4.3	4.2	4.2	4.4	4.4	4.3	4.3
Family fun	4.2	4.2	4.2	4.3	4.1	4.2	4.3	4.3	4.0
Good restaurants	4.2	4.1	4.2	4.1	4.3	4.3	4.3	4.4	4.2
Clean air	4.1	4.1	4.2	4.3	4.0	4.1	4.1	4.1	4.2
Summer fun	4.1	4.1	4.1	4.0	4.0	4.1	4.2	4.1	4.1
Lots of things to do	4.1	4.0	4.1	3.9	4.0	4.0	4.2	4.1	4.0
Peace and quiet	3.9	3.9	4.0	3.9	3.8	3.8	3.9	3.9	3.8
Easy to get to	3.9	3.8	3.8	3.8	3.9	4.0	4.0	3.9	3.8
Excitement	3.7	3.6	3.8	3.6	3.6	3.5	3.7	3.6	3.7
Winter fun	2.9	3.1	3.0	3.1	2.7	2.7	2.8	2.8	3.1
Good night life	3.1	3.0	3.2	3.0	3.1	3.0	3.2	3.1	3.2
High prestige vacation	2.5	2.5	2.5	2.4	2.6	2.4	2.6	2.5	2.6
ATTRACTIONS/EVENTS OF INTEREST WHEN ON A PLEASURE TRIP	N=3315	N=704	N=475	N=243	N=359	N=246	N=494	N=236	N=559
Night clubs, shows, restaurants	30%	32%	31%	26%	35%	26%	26%	28%	34%
Natural attractions	16	18	19	11	10	10	10	20	23
Historic sites	10	10	7	6	8	8	5	21	14
Man-made attractions	11	9	10	9	10	8	18	11	13
Landmarks	8	7	6	7	7	6	4	14	12
Movies	5	6	3	4	7	6	6	4	3
Professional/spectator sports	5	5	5	4	5	4	6	4	4
Festivals	3	5	3	2	1	3	3	1	4
Museums	8	4	6	6	13	7	8	8	12
Fairs, exhibits	5	4	4	6	7	6	6	4	4
Cultural events	3	2	2	2	3	4	3	3	4
Industry tours	1	1	1	0	1	0	1	4	1

Table 3-4. Characteristics of pleasure trips to Michigan versus surrounding states, October 1983 through May 1986 (continued).

	REGION				DESTINATION				
	AS A WHOLE	MI	WI	MN	IL	IN	OH	PA[1]	ONT[1]
PURPOSE OF TRIP	N=4109	N=873	N=577	N=295	N=441	N=323	N=612	N=300	N=688
Visit friends/relatives	46%	45%	37%	50%	57%	47%	48%	53%	34%
Outdoor recreation	23	29	35	20	7	19	20	18	27
Sightseeing/touring	14	14	14	11	12	13	9	13	24
Specific attraction	8	6	6	9	10	11	14	5	6
Pleasure/business	3	2	2	2	5	3	4	5	2
Shopping	2	1	1	5	5	3	1	1	3
Other	4	3	5	3	4	4	4	5	4
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
TYPE OF LODGING USED	N=3196	N=674	N=470	N=237	N=342	N=230	N=467	N=227	N=549
Friend's/relative's house	39%	37%	33%	43%	53%	40%	46%	51%	28%
Hotel/motel	36	29	33	36	37	43	37	32	41
Owned cabin/cottage	6	9	9	4	1	3	3	2	9
Rented cabin/cottage	6	8	9	7	1	4	3	3	9
Public campground	6	9	9	8	2	8	5	6	5
Private campground	5	5	4	3	3	1	5	5	5
Resort, spa, dude ranch	2	2	4	3	1	1	1	0	2
AVG. SPENDING PER PARTY PER TRIP	N=1640	N=331	N=218	N=126	N=183	N=119	N=264	N=127	N=272
Transportation	$71	$75	$58	$62	$73	$49	$51	$98	$93
Meals	62	55	71	58	65	53	45	65	85
Lodging	56	46	73	64	58	44	40	48	90
Entertainment/activities	41	41	46	43	45	30	27	36	54
Miscellaneous	34	30	31	48	49	20	25	36	41
AVERAGE TOTAL SPENDING PER PARTY PER TRIP	N=1545 $260	N=311 $244	N=212 $279	N=122 $277	N=168 $275	N=108 $188	N=246 $180	N=121 $271	N=257 $346

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[1] Entire state or province not included in study region.

[2] Means on a scale from 1 ("strongly disagree") to 5 ("strongly agree").

[3] Means on a scale from 1 ("not at all important") to 5 ("one of the most important").

CAUTION: See discussion of study limitations in text.

SOURCE: Ross Roy, Inc. 1986. "Great Lakes Travel Monitor (Travel October, 1983, Through May, 1986)." Report prepared for Michigan Travel Bureau. Detroit, MI: Ross Roy, Inc.

Respondents' perceptions and preferences with respect to pleasure travel were measured by soliciting their reaction to various statements about the attributes of vacations and travel experiences. They expressed the strongest agreement with the statements that "the best vacations" permitted one to "escape from my daily routine" and made "lasting memories and impressions" (Table 3-4). They expressed the least agreement with the statements that the "best vacations" "let me do things as when a kid," or "let me live in luxury." The attributes of pleasure trips that were most highly rated were "good scenery" and "friendly people"; "good night life" and "high prestige vacations" received the lowest importance ratings.

The attraction/event of interest when on a pleasure trip that was most frequently cited by those who visited Michigan on such trips was "night clubs, shows, restaurants" (32%) (Table 3-4). This finding would be more meaningful if "restaurants" had been a separate category. The next most frequently cited attractions/events were: natural attractions (18%), landmarks and historic sites (17%), man-made attractions and museums (13%), and festivals, fairs, and cultural events (11%).

Respondents expressed the strongest agreement that Michigan was known for "good scenery" and "summer fun," and the least agreement that Michigan was known for "good night life" and "high prestige vacations" (Table 3-5). Overall, Michigan was highly rated--4.5 on a scale from 1 ("among the worst places to take a vacation") to 5 ("among the best places to take a vacation"). Moreover, respondents indicated a high likelihood of a return visit to Michigan--4.5 on a scale from 1 ("not at all likely") to 5 ("very likely") (Table 3-5).

In general, very few respondents stated that they had obtained information from various sources about travel to Michigan before, during, or after their trip (Table 3-6). The most frequently-cited sources were television (8%) and a friend or relative (7%). These results are strikingly different from those of most other studies of Michigan travelers, which have found that respondents report far greater reliance on information obtained from friends and relatives.

The most frequently cited purposes of pleasure trips to and through Michigan were to visit friends/relatives (45%), outdoor recreation (29%), and sightseeing/touring (14%) (Table 3-6). Less frequently cited purposes included visiting a specific attraction (6%), pleasure/business (2%), shopping (1%), or some other purpose (3%). Since business trips were excluded in this survey, the low percentage in the pleasure/business category is likely due to the study design.

The most frequently cited type of lodging used was friend's/relative's homes (37%), reflecting the fact that the purpose of 45% of the trips was to visit friends or relatives (Table 3-6). Hotels/motels were cited in the case of 29% of the pleasure trips. Less frequently cited were public campgrounds (9%), owned cabins/cottages (9%), rented cabins/cottages (8%), private campgrounds (5%), or resorts, spas, or dude ranches (2%).

Average total spending per party per trip was $244, roughly distributed as follows: $75 for transportation, $55 for meals, $46 for lodging, $41 for entertainment/activities, and $30 for other items (Table 3-6). However, the potential error associated with these estimates is particularly high since it is doubtful that respondents could accurately estimate expenditures during a telephone interview for trips taken as much as 12 months earlier. All things considered, these estimates are most likely lower than the true averages because of respondents' inability to recall all expenditures made on their trips.

Table 3-5. Characteristics of pleasure trips to Michigan by season, October 1983-May 1986.

	ALL SEASONS	WARM (APR-AUG)	FALL (SEP-NOV)	WINTER (DEC-MAR)
AGE	N=844	N=464	N=244	N=136
18-24	14%	14%	13%	18%
25-34	29	29	34	24
35-44	27	28	22	29
45-54	12	12	10	13
55-64	13	12	15	10
65 or older	5	5	6	6
Total	100%	100%	100%	100%
MARITAL STATUS	N=869	N=477	N=253	N=139
Married	73%	74%	72%	68%
Not married	27	26	28	32
Total	100%	100%	100%	100%
EDUCATION	N=857	N=474	N=248	N=135
Did not complete high school	5%	4%	6%	5%
Completed high school	33	36	29	28
Attended college	32	30	34	35
Completed college	30	30	31	32
Total	100%	100%	100%	100%
HOUSEHOLD INCOME	N=630	N=353	N=183	N=94
Under $10,000	6%	5%	7%	8%
$10,000-$19,999	15	13	21	9
$20,000-$29,999	29	33	32	13
$30,000 or more	50	49	40	70
$40,000 or more	26	28	20	31
$50,000 or more	14	13	13	22
ACTIVITIES OF INTEREST WHEN ON A PLEASURE TRIP	N=704	N=384	N=211	N=109
Swimming	22%	31%	15%	4%
Lake fishing	16	22	13	1
Hiking/backpacking	14	17	14	8
Power boating	8	12	6	0
Camping	6	9	4	3
Sunbathing	5	7	4	1
Bicycling	5	7	2	4
Golf	4	6	3	2
Stream/river fishing	4	4	5	4
Water skiing	4	5	3	1
Hunting	4	1	8	3
Tennis	3	3	4	5
Canoeing	3	5	2	1
Sailing	3	5	1	1
Horseback riding	3	3	4	0
Charter boat fishing	2	1	3	2
Downhill skiing	2	0	0	11
Snowmobiling	2	0	0	9
Cross-country skiing	2	0	0	7
Ice fishing	1	0	0	5
Rafting	0	0	0	0
Miscellaneous sports	7	8	6	6

Table 3-5. Characteristics of pleasure trips to Michigan by season, October 1983-May 1986 (continued).

	ALL SEASONS	WARM (APR-AUG)	FALL (SEP-NOV)	WINTER (DEC-MAR)
AGREEMENT THAT "THE BEST VACATIONS ARE THOSE WHICH. . ."[1]	N=858	N=472	N=250	N=138
Let me escape from my daily routine	4.6	4.6	4.5	4.5
Make lasting memories and impressions	4.5	4.5	4.6	4.5
Take me to places I've never been before	4.4	4.4	4.4	4.4
Bring new experiences	4.3	4.3	4.3	4.3
Take me to places away from home	4.3	4.3	4.3	4.4
Give me a chance to rest	4.1	4.1	4.0	3.9
Let me return to nature	4.1	4.2	4.1	3.9
Keep me busy all the time	3.3	3.3	3.2	3.2
Help me meet lots of new people	3.3	3.4	3.2	3.3
Let me do things as when a kid	3.1	3.2	3.0	2.8
Let me live in luxury	2.9	3.0	2.9	2.9
IMPORTANCE OF VARIOUS ATTRIBUTES WHEN TRAVELING[2]	N=871	N=480	N=252	N=139
Good scenery	4.4	4.4	4.4	4.3
Friendly people	4.4	4.4	4.3	4.3
Good places to stay	4.3	4.4	4.2	4.1
Reasonable prices	4.3	4.3	4.3	4.2
Family fun	4.2	4.2	4.2	4.1
Good restaurants	4.1	4.2	4.1	4.0
Clean air	4.1	4.2	4.1	4.0
Summer fun	4.1	4.2	4.1	4.1
Lots of things to do	4.0	4.1	3.9	4.0
Peace and quiet	3.9	4.0	3.8	3.8
Easy to get to	3.8	3.9	3.8	3.7
Excitement	3.6	3.7	3.6	3.6
Winter fun	3.1	3.1	2.9	3.3
Good night life	3.0	3.0	2.9	3.2
High prestige vacations	2.5	2.5	2.4	2.4
ATTRACTIONS/EVENTS OF INTEREST WHEN ON A PLEASURE TRIP	N=704	N=384	N=211	N=109
Night clubs, shows, restaurants	32%	32%	32%	30%
Natural attractions	18	22	17	6
Historic sites	10	14	9	3
Man-made attractions	9	10	7	9
Landmarks	7	9	6	3
Movies	6	4	8	6
Professional/spectator sports	5	4	8	7
Festivals	5	5	6	4
Museums	4	3	5	6
Fairs, exhibits	4	4	6	1
Cultural events	2	3	2	0
Industry tours	1	1	1	0

Table 3-5. Characteristics of pleasure trips to Michigan by season, October 1983-May 1986 (continued).

	ALL SEASONS	WARM (APR-AUG)	FALL (SEP-NOV)	WINTER (DEC-MAR)
RATING OF MICHIGAN ATTRIBUTES[3]	N=846	N=464	N=251	N=136
Good scenery	8.6	8.5	8.7	8.6
Summer fun	8.5	8.5	8.5	8.6
Winter fun	8.4	8.3	8.3	8.6
Easy to get to	8.4	8.3	8.5	8.3
Family fun	8.2	8.3	8.2	8.2
Lots of things to do	8.2	8.1	8.4	8.3
Good places to stay	7.8	7.7	7.8	7.7
Friendly people	7.8	7.8	7.9	7.7
Peace and quiet	7.6	7.7	7.6	7.1
Clean air	7.5	7.7	7.5	7.2
Good restaurants	7.4	7.4	7.4	7.2
Excitement	7.2	7.1	7.4	7.2
Reasonable prices	7.0	6.9	7.2	6.9
Good night life	6.7	6.7	6.5	6.8
High prestige vacations	6.0	6.0	5.9	5.8
	N=863	N=477	N=251	N=135
OVERALL RATING OF MICHIGAN[4]	4.5	4.5	4.5	4.5
LIKELIHOOD OF A RETURN	N=650	N=352	N=196	N=102
VISIT TO MICHIGAN[5]	4.5	4.5	4.6	4.6
PURPOSE OF TRIP	N=873	N=481	N=253	N=139
Visit friends/relatives	45%	40%	48%	56%
Outdoor recreation	29	32	22	29
Sightseeing/touring	14	16	15	3
Specific attraction	6	5	7	7
Pleasure/business	2	2	2	1
Shopping	1	1	1	3
Other	3	4	5	1
Total	100%	100%	100%	100%
TYPE OF LODGING USED	N=674	N=373	N=196	N=105
Friend's/relative's house	37%	34%	38%	49%
Hotel/motel	29	29	29	28
Owned cabin/cottage	9	10	11	6
Rented cabin/cottage	8	8	5	12
Public campground	9	10	8	2
Private campground	5	7	6	2
Resort, spa, dude ranch	2	3	2	1
AVG. SPENDING PER PARTY PER TRIP	N=331	N=171	N=106	N=55
Transportation	$75	$74	$76	$79
Meals	55	57	50	63
Lodging	46	52	40	39
Entertainment/activities	41	47	32	41
Miscellaneous	30	32	31	20

Table 3-5. Characteristics of pleasure trips to Michigan by season, October 1983-May 1986 (continued).

	ALL SEASONS	WARM (APR-AUG)	FALL (SEP-NOV)	WINTER (DEC-MAR)
AVERAGE TOTAL SPENDING PER PARTY PER TRIP	N=311 $244	N=162 $253	N=100 $230	N=49 $239

[1] Means on a scale from 1 ("strongly disagree") to 5 ("strongly agree").

[2] Means on a scale from 1 ("not at all important") to 5 ("one of the most important").

[3] Means on a scale from 1 ("strongly disagree") to 10 ("strongly agree") that Michigan is known for a given attribute based on what respondent had seen, heard, or read.

[4] Means on a scale from 1 ("among the worst places to take a vacation") to 5 ("among the best places to take a vacation").

[5] Means on a scale from 1 ("not at all likely") to 5 ("very likely").

CAUTION: See discussion of study limitations in text.

SOURCE: Ross Roy, Inc. 1986. "Great Lakes Travel Monitor (Travel October, 1983, Through May, 1986)." Report prepared for Michigan Travel Bureau. Detroit, MI: Ross Roy, Inc.

Table 3-6. Characteristics of pleasure trips to regional tourist association jurisdictions in Michigan, October 1983-May 1986.

	MICHIGAN AS A WHOLE	REGIONAL TOURIST ASSOCIATION JURISDICTION U.P.	East	West	Southeast
AGE	N=844	N=124	N=214	N=235	N=189
18-24	14%	15%	12%	13%	22%
25-34	29	24	30	30	28
35-44	27	36	27	26	18
45-54	12	13	12	11	13
55-64	13	10	13	14	13
65 or older	5	2	6	6	6
Total	100%	100%	100%	100%	100%
MARITAL STATUS	N=869	N=129	N=219	N=247	N=192
Married	73%	74%	80%	74%	63%
Not married	27	26	20	26	37
Total	100%	100%	100%	100%	100%
EDUCATION	N=857	N=129	N=217	N=243	N=190
Did not complete high school	5%	5%	5%	7%	2%
Completed high school	33	41	34	25	32
Attended college	32	22	30	37	37
Completed college	30	32	31	31	29
Total	100%	100%	100%	100%	100%
HOUSEHOLD INCOME	N=630	N=80	N=184	N=171	N=139
Under $10,000	6%	6%	3%	8%	6%
$10,000-$19,999	15	14	15	13	19
$20,000-$29,999	29	30	38	22	24
$30,000 or more	50	50	44	57	51
$40,000 or more	26	26	20	29	31
$50,000 or more	14	11	10	18	18
ACTIVITIES OF INTEREST WHEN ON A PLEASURE TRIP	N=704	N=102	N=173	N=194	N=166
Swimming	22%	24%	24%	30%	6%
Lake fishing	16	21	22	19	3
Hiking/backpacking	14	22	17	13	3
Power boating	8	9	5	13	2
Camping	6	7	8	6	2
Sunbathing	5	2	5	8	6
Bicycling	5	11	7	4	3
Golf	4	4	4	5	2
Stream/river fishing	4	8	5	6	1
Water skiing	4	3	4	8	0
Hunting	4	1	9	4	4
Tennis	3	0	3	5	5
Canoeing	3	4	3	6	1
Sailing	3	1	2	5	2
Horseback riding	3	1	3	3	2
Charter boat fishing	2	3	4	2	0
Downhill skiing	2	2	0	3	0
Snowmobiling	2	1	4	3	4
Cross-country skiing	2	3	0	4	0
Ice fishing	1	1	0	3	0
Rafting	0	1	0	0	0
Miscellaneous sports	7	2	9	6	10

Table 3-6. Characteristics of pleasure trips to regional tourist association jurisdictions in Michigan, October 1983-May 1986 (continued).

	MICHIGAN AS A WHOLE	REGIONAL TOURIST ASSOCIATION JURISDICTION			
		U.P.	East	West	Southeast
AGREEMENT THAT "THE BEST VACATIONS ARE THOSE WHICH. . ."[1]	N=858	N=127	N=217	N=245	N=190
Let me escape from my daily routine	4.6	4.6	4.5	4.5	4.6
Make lasting memories and impressions	4.5	4.6	4.6	4.5	4.4
Take me to places I've never been before	4.4	4.4	4.3	4.4	4.3
Bring new experiences	4.3	4.2	4.2	4.3	4.3
Take me to places away from home	4.3	4.3	4.3	4.4	4.3
Give me a chance to rest	4.1	4.0	4.1	4.1	4.1
Let me return to nature	4.1	4.3	4.2	4.3	3.7
Keep me busy all the time	3.3	3.2	3.3	3.3	3.3
Help me meet lots of new people	3.3	3.1	3.3	3.4	3.5
Let me do things as when a kid	3.1	3.2	3.2	3.0	2.9
Let me live in luxury	2.9	2.7	2.8	3.0	3.2
IMPORTANCE OF VARIOUS ATTRIBUTES WHEN TRAVELING[2]	N=871	N=129	N=219	N=246	N=193
Good scenery	4.4	4.5	4.3	4.5	4.2
Friendly people	4.4	4.4	4.4	4.4	4.4
Good places to stay	4.3	4.3	4.3	4.4	4.3
Reasonable prices	4.3	4.3	4.2	4.3	4.3
Family fun	4.2	4.3	4.1	4.3	4.1
Good restaurants	4.1	4.2	4.1	4.1	4.3
Clean air	4.1	4.3	4.0	4.2	4.0
Summer fun	4.1	4.3	4.1	4.2	4.0
Lots of things to do	4.0	4.1	4.0	3.9	4.2
Peace and quiet	3.9	3.9	3.9	4.1	3.7
Easy to get to	3.8	3.7	3.9	4.4	3.8
Excitement	3.6	3.6	3.6	3.5	3.8
Winter fun	3.1	3.0	3.2	3.2	2.9
Good night life	3.0	2.8	3.1	2.9	3.2
High prestige vacations	2.5	2.4	2.4	2.5	2.6
ATTRACTIONS/EVENTS OF INTEREST WHEN ON A PLEASURE TRIP	N=704	N=102	N=173	N=194	N=166
Night clubs, shows, restaurants	32%	26%	34%	29%	36%
Natural attractions	18	35	16	21	6
Historic sites	10	15	9	11	11
Man-made attractions	9	13	13	5	8
Landmarks	7	10	8	8	3
Movies	6	3	5	5	8
Professional/spectator sports	5	3	5	2	13
Festivals	5	3	6	5	4
Museums	4	4	4	4	7
Fairs, exhibits	4	3	5	6	2
Cultural events	2	1	2	3	3
Industry tours	1	1	2	1	0

Table 3-6. Characteristics of pleasure trips to regional tourist association jurisdictions in Michigan, October 1983-May 1986 (continued).

	MICHIGAN AS A WHOLE	REGIONAL TOURIST ASSOCIATION JURISDICTION			
		U.P.	East	West	Southeast
WHERE INFORMATION ABOUT TRAVEL TO MICHIGAN WAS SEEN, HEARD, OR READ BEFORE, DURING, OR AFTER TRIP	N=665	N=93	N=165	N=183	N=159
Television	8%	14%	9%	6%	8%
Friend/relative	7	10	4	7	8
Newspaper-not travel section	5	5	6	7	3
AAA or other auto club	4	7	3	6	2
Magazine	4	4	4	4	1
Newspaper-travel section	3	2	3	4	3
Travel agent	2	4	1	2	2
Radio	2	3	2	1	3
Billboards	2	1	4	2	1
State's tourist center, 800 number	2	4	2	2	1
Chamber of commerce or other state source	1	1	2	1	0
At destination	1	0	2	1	1
LIKELIHOOD OF A RETURN VISIT TO MICHIGAN[3]	N=650 4.5	N=92 4.3	N=156 4.6	N=181 4.6	N=154 4.6
PURPOSE OF TRIP	N=873	N=129	N=219	N=248	N=193
Visit friends/relatives	45%	34%	37%	46%	62%
Outdoor recreation	29	33	33	38	6
Sightseeing/touring	14	21	19	7	10
Specific attraction	6	5	4	4	12
Pleasure/business	2	0	2	2	4
Shopping	1	2	1	1	1
Other	3	5	4	2	5
Total	100%	100%	100%	100%	100%
MODE OF TRANSPORTATION		N=102	N=173	N=194	N=166
Own car	N.A.	87%	87%	88%	86%
Own recreational vehicle	N.A.	7	6	6	2
Bus	N.A.	4	3	3	4
Plane	N.A.	1	2	0	4
Rental car	N.A.	1	2	2	2
Rented recreational vehicle	N.A.	0	0	0	1
Train	N.A.	0	0	0	1
Boat	N.A.	0	0	1	0
Total	N.A.	100%	100%	100%	100%
AVERAGE NUMBER OF MILES TRAVELED ONE WAY	N.A.	N=99 371	N=170 272	N=191 274	N=160 308
TRIP DURATION		N=124	N=207	N=239	N=183
One day	N.A.	7%	10%	11%	10%
2-3 days	N.A.	39	54	54	61
4-9 days	N.A.	48	28	25	24
More than 9 days	N.A.	6	8	10	5
Total	N.A.	100%	100%	100%	100%

Table 3-6. Characteristics of pleasure trips to regional tourist association jurisdictions in Michigan, October 1983-May 1986 (continued).

	MICHIGAN AS A WHOLE	REGIONAL TOURIST ASSOCIATION JURISDICTION			
		U.P.	East	West	Southeast
TYPE OF LODGING USED	N=674	N=100	N=163	N=187	N=156
Friend's/relative's house	37%	25%	32%	36%	56%
Hotel/motel	29	31	30	25	33
Public campground	9	13	8	11	4
Private campground	5	2	11	3	3
Owned cabin/cottage	9	10	12	12	2
Rented cabin/cottage	8	13	6	11	1
Resort, spa, dude ranch	2	5	1	3	0
AVG. SPENDING PER PARTY PER TRIP	N=331	N=37	N=91	N=101	N=71
Transportation	$75	$63	$81	$79	$69
Meals	55	69	44	56	57
Lodging	46	82	35	51	33
Entertainment/activities	41	45	33	37	49
Miscellaneous	30	52	18	25	41
AVERAGE TOTAL SPENDING PER PARTY PER TRIP	N=311 $244	N=34 $292	N=88 $204	N=96 $244	N=67 $255

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[1] Means on a scale from 1 ("strongly disagree") to 5 ("strongly agree").

[2] Means on a scale from 1 ("not at all important") to 5 ("one of the most important").

[3] Means on a scale from 1 ("not at all likely") to 5 ("very likely").

CAUTION: See discussion of study limitations in text.

SOURCE: Ross Roy, Inc. 1986. "Great Lakes Travel Monitor (Travel October, 1983, Through May, 1986)." Report prepared for Michigan Travel Bureau. Detroit, MI: Ross Roy, Inc.

Pleasure Travel To and Through Michigan Versus Surrounding States

Some differences (other than those to be expected from sampling variation) are evident in the characteristics of respondents on pleasure trips to Michigan versus surrounding states. For example, 29% of the respondents on trips to Michigan cited outdoor recreation as the purpose of their trip, compared to only 7% of those on trips to Illinois (Table 3-4). Similarly, 23% of those on trips to Michigan cited fishing (of all types) as an activity of interest when on a pleasure trip, compared to only 5% of those on trips to Illinois, 6% of those on trips to Indiana, and 9% of those on trips to Ohio. On the other hand, 21% of the respondents on trips to western Pennsylvania stated that visiting historic sites was an activity of interest, compared to only 10% of those on trips to Michigan, and 13% of the respondents on trips to Illinois stated that visiting museums was an activity of interest, compared to only 4% of those on trips to Michigan.

Notwithstanding these differences, the overriding result of this analysis is the general similarity in responses from travelers on trips to the various states in the study region, particularly with regard to their opinions regarding what constitutes a good vacation and the importance they placed on various attributes of a pleasure trip. To some extent, this is because the same travel parties visited more than one state. These results suggest that while the various states in the region do differ with respect to the type of "travel product" they offer, they nevertheless appear to have generally attracted the same types of pleasure travelers.

Seasonal Variations in Pleasure Travel To and Through Michigan

The changes of the seasons in Michigan present travel marketers with both challenges and opportunities, so it is useful to know something about seasonal variations in the character of Michigan's pleasure travel market. To provide a perspective on this subject, the characteristics of pleasure trips that took place during the "warm season" (April through August), the fall (September through November), and the winter (December through March) are compared in Table 3-5.

With respect to participation in recreation activities, the results simply reflect the fact that interest in recreation activities obviously changes with the seasons. For example, it is not surprising that 12% of the respondents on trips to Michigan during the warm season stated that power boating was an activity of interest when on a pleasure trip, compared to 6% in the fall and 0% in the winter. The percentage of respondents that expressed an interest in natural attractions, historic sites, and landmarks similarly diminished with the arrival of colder temperatures.

The percentage of respondents who stated that outdoor recreation was the purpose of their trip was 32% in the warm season, 22% in the fall, and 29% in the winter. The percentage who stated that the purpose of their trip was "sightseeing/touring" was higher in the warm season (16%) and in the fall (15%) than in the winter (3%). In contrast, the percentage that stated that visiting friends and relatives was the purpose of their trip was lower in the warm season (40%) and in the fall (48%) than in the winter (56%).

The percentage of respondents that used public or private campgrounds steadily diminished from the warm season to fall to winter, whereas use of friends' and relatives' homes increased as temperatures declined. Use of hotel/motels remained constant across seasons.

No significant differences across seasons emerged in terms of perceptions about what constitutes a good vacation, the importance placed on various attributes of pleasure travel, ratings of Michigan attributes, or overall rating of Michigan as a travel destination. Nor were significant differences observed in terms of demographic characteristics, except that those traveling in the winter were more likely to have had household incomes in excess of $30,000.

Spatial Variations in Pleasure Travel To and Through Michigan

Michigan consists of many diverse regions, ranging the wilds of the Upper Peninsula to the metropolitan Detroit area, with a good deal of variation in between. It is therefore important to understand something of the differing character of pleasure travel to such regions. To this end statistics are presented in Table 3-6 which compare the characteristics of pleasure trips to the jurisdictions of each of the four regional tourist associations that existed at the time of the survey: the Upper Peninsula Travel and Recreation Association, the East Michigan Tourist Association, the West Michigan Tourist Association, and the Travel and Tourist Association of Southeast Michigan. The boundaries of these regions are shown in Figure 3-1.[1]

The statistics in Table 3-6 generally reflect the differing characteristics of the "travel product" provided in the various regions. Pleasure trips to Southeast Michigan included somewhat greater proportions of younger and unmarried people. Furthermore, compared to those who took trips to other regions, respondents on such trips were the least likely to have: (1) cited outdoor recreation as a trip purpose, (2) stated that natural attractions were of interest when on a pleasure trip, or (3) expressed an interest in participating in various outdoor recreation activities when on a such a trip. In contrast, they were the most likely to have cited visiting friends and relatives or a specific attraction as a trip purpose or to have stated that professional/spectator sports were of interest when on a pleasure trip.

Respondents on trips to Southeast Michigan were least likely to have lodged in a campground or cabin/cottage. Utilization of friends/relatives homes for lodging was highest in Southeast Michigan, moderate in East and West Michigan, and lowest in the Upper Peninsula (U.P.). These results seem to reflect the spatial distribution of Michigan's population.

The characteristics of pleasure trips to East Michigan were generally quite similar to those of pleasure trips to West Michigan, except 57% of the trips to the latter included individuals with incomes of $30,000 or more compared to only 44% of the trips to the East. Moreover, trips to the East involved expenditures per party per trip that were lower than those of trips to the other regions.

Respondents on pleasure trips to the U.P. or East Michigan more frequently cited sightseeing/touring as a trip purpose than respondents on trips to the West or Southeast regions of the state. Those on trips to the U.P. expressed the greatest interest in natural attractions and historic sites, perhaps reflecting the abundance of such sites there.

Trips to the U.P. involved the greatest one-way travel distances, reflecting the relatively greater distance of the U.P. from population centers in the study region. Similarly, those on such trips were the most likely to have been on trips of relatively long duration: 54% were on trips of 4 or more days, compared to 36% of those who took trips to East Michigan, 35% of those who took trips to West Michigan, and 29% of those who took trips to Southeast Michigan. This greater trip duration may help to explain the fact that trips to the U.P. involved greater expenditures ($292) compared to trips to the other regions ($204-$255). The

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[1] The East Michigan Tourist Association and the Travel and Tourist Association of Southeast Michigan are now defunct.

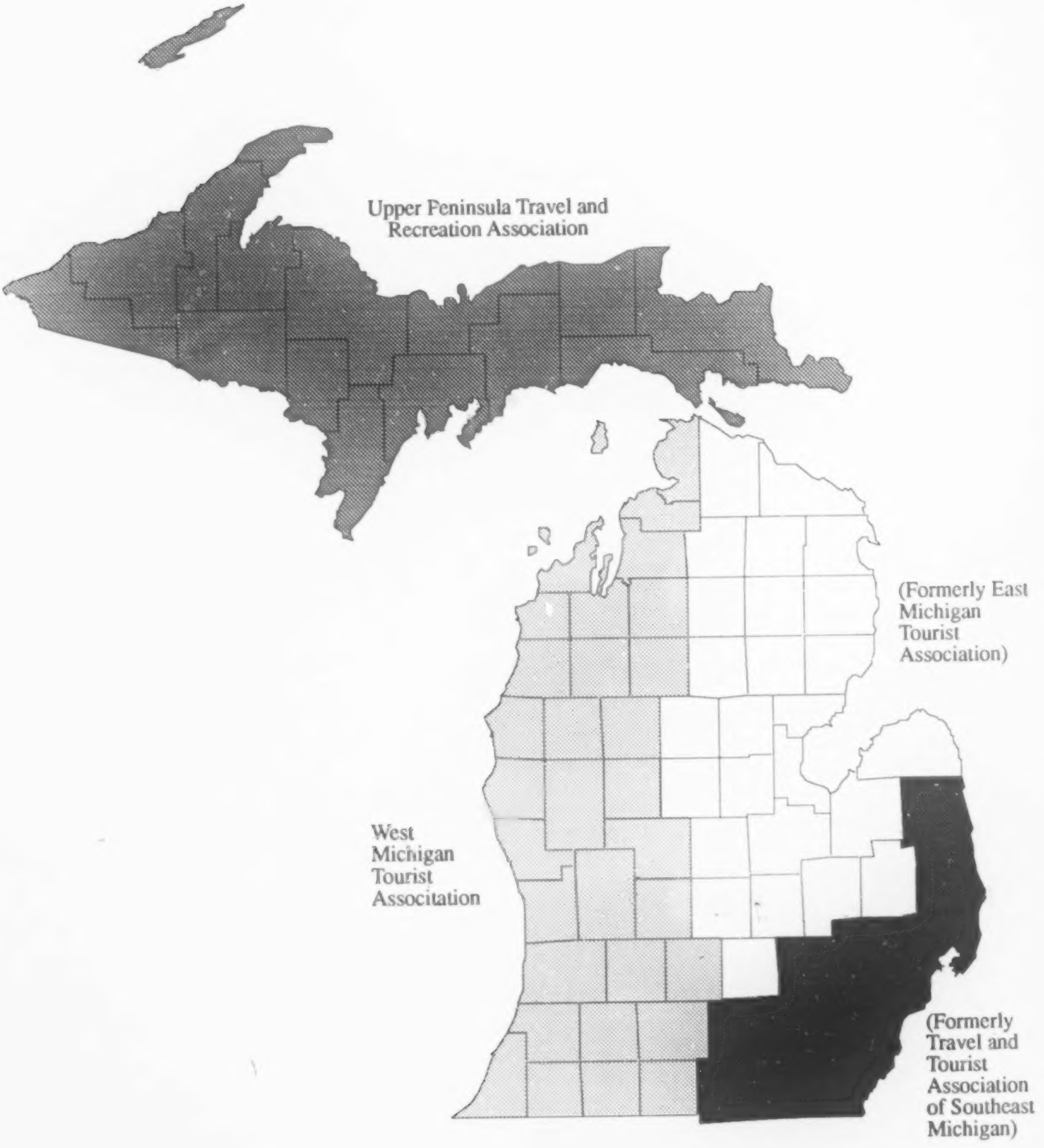
Upper Peninsula Travel and Recreation Association
(Formerly East Michigan Tourist Association)
West Michigan Tourist Associtation
(Formerly Travel and Tourist Association of Southeast Michigan)

Figure 3-1. Boundaries of present and former regional tourist associations in Michigan.

U.P.'s relative remoteness and low population density contributes to its image as a destination for wildland recreation, but the additional time and money required to visit the U.P. versus other destinations in the Upper Midwest is a major challenge facing those seeking to increase tourism in the region, especially in view of a national trend toward more weekend vacation trips and fewer person-nights of vacation travel (USTDC, 1988:20,21).

No substantive differences between the regions emerged in terms of education, where information about travel to Michigan was obtained, mode of transportation used, perceptions of what constitutes a good vacation, or the importance placed on various attributes of a pleasure trip.

Summary and Conclusions

The statistics presented in this chapter have significant limitations and date to the mid-1980s. However, they are the only such statistics available, and in view of the critical importance of such information in making marketing decisions they should probably be considered better than nothing. Little progress is being made toward a program to insure that more reliable and current data will be available in the future, and indeed, no data collection efforts to this end are underway or planned at this time.

Gleaning the limited information available, the following picture of the Michigan travel market as it existed in the mid-1980s emerges:

--Michigan's prime travel market consisted of the following states from which it drew over 80% of its overnight person-trips: Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, and Wisconsin.

--This prime market contained nearly 50 million people (20% of U.S. population) with disposable household incomes just slightly below the U.S. average.

--Over 80% of overnight trips were by auto, truck, or RV.

--About half of the overnight trips occurred on week-ends.

--About two-thirds of the overnight trips involved round-trip travel of 600 miles or less.

--The average length of stay in Michigan by those on overnight trips was about 4 nights.

--About 43% of the overnight trips involved lodging in the home of friends or relatives, 30% involved the use of hotels or motels, 11% involved the use of a camper, RV, or tent, and 9% involved the use of an owned or rented vacation home.

--About 40% of all overnight trips were taken in July, August, or September.

--Over three-quarters of overnight trips were taken by people traveling without children.

--About 70% of overnight travelers were married.

--Forty-five percent of pleasure trips were primarily to visit friends and relatives, 29% were primarily for outdoor recreation, and 20% were primarily for sightseeing/tours/special attractions.

--The recreation activities most likely to be considered of interest when on pleasure trips by those who visited Michigan on such trips were: fishing (23%), swimming (22%), boating/canoeing/water skiing (18%), hiking/backpacking (14%), and camping (6%).

--The attractions/events of interest when on a pleasure trip that were most frequently cited by those who visited Michigan on such trips were: dining and evening entertainment (32%), natural attractions (18%), landmarks and historic sites (17%), man-made attractions and museums (13%), and festivals, fairs, and cultural events (11%).

--Average expenditures per trip among those who visited Michigan on pleasure trips were $244, roughly distributed as follows: $75 for transportation, $55 for meals, $46 for lodging, $41 for entertainment/activities, and $30 for other items.

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CHAPTER 4

FEDERAL AND STATE RECREATION LANDS IN MICHIGAN

Philip A. Wells and Mark A. Eidelson

Introduction

Michigan contains large acreages of federal and state lands which support the overall vitality of the state in many ways. Most obviously, these lands provide abundant recreation opportunities to Michigan residents. But they also act as regional and national tourist attractions, and as such encourage the flow of dollars into the state's economy. They also contribute significantly to Michigan's image as a desirable place to live, visit, and recreate. Public ownership of these lands assures the wise management of the natural resources within them so that these resources may be enjoyed and appreciated by future generations.

This chapter describes the nature and locations of federal and state recreation lands in Michigan and presents statistics on their acreages. These statistics can help to assess Michigan's advantages and disadvantages in competing with other states for increased tourism dollars, and can aid business location decisions when federal and state recreation lands might affect the success of such enterprises. However, it is important to recognize that acreage is not a comprehensive measure of recreation opportunity. The extent to which people choose or are able to use these lands for recreation depends on many factors which are not discussed herein, including the natural attributes of the lands and the amount, type, and quality of:

--public recreation facilities and services provided thereon;
--fish and wildlife resources they contain;
--private sector support facilities and services such as food stores, motels, and campgrounds;
--transportation facilities providing access to the lands; and
--information provided to the public about all of the above.

In keeping with this book's focus on tourism, the discussion below deals strictly with federal and state recreation lands, i.e., lands managed by a federal or state agency that are open to the public for recreation purposes. Federal lands that are not open to public recreation, such as military bases and Indian reservations, are not included in this definition. Lands owned by local units of government which are open to public recreation are also excluded. However, the more than 100,000 acres of such lands are not unimportant since they meet many of the day-to-day recreation needs of Michiganians. Finally, it should be noted that recreation may not be the sole use of all lands included in our definition. For example, national and state forests are managed under a multiple-use philosophy to provide timber, wildlife, minerals, watershed protection, and other benefits as well as recreation opportunities.

The acreage statistics presented below pertain only to lands actually owned by the federal and state governments even though the official boundaries of some management units encompass lands in other ownerships. Since these lands in other ownerships are generally not open to public recreation, they are not included in the statistics in this chapter. Also, many federal and state recreation areas include bodies of water, rivers, and associated watercourses. Our acreage statistics include such inland waters, but not Great Lakes waters.

The chapter begins with a comparison of the amount of federal and state recreation lands in Michigan versus other states, continues with a statewide overview of these lands by management category, and then discusses the amount of such lands in Michigan's counties.

Michigan in Relation to Other States

Federal and state recreation lands in Michigan total nearly 7.6 million acres, or about 20% of the state's total area (Figure 4-1). State lands account for about 59% (4.4 million acres) of the total. Almost 90% of the acreage is in national and state forests.

The state's extensive holdings of federal and state recreation land give it a relatively high standing compared to other states. Michigan ranks fifth in state acreage, 15th in federal acreage, and 14th in total acreage (Table 4-1). These rankings are higher than those of any of its principal competitors for tourism dollars in the Great Lakes region (i.e., Illinois, Indiana, Minnesota, Ohio, and Wisconsin). Michigan's rankings in terms of state recreation land are especially high, mainly due to its extensive state forest acreages, as discussed later in this chapter.

In terms of acreage as a percentage of total land area of a given state, Michigan ranks seventh in state acreage, 18th in federal acreage, and 18th in total acreage. In terms of acreage per capita of resident population, Michigan ranks 13th in state acreage, 25th in federal acreage, and 20th in total acreage (Table 4-2).

Recreation Land Acreage By Management Category

Several government agencies manage federal and state recreation lands in Michigan, each in accordance with its own particular mission. The following discusses the character and acreages of the land holdings of each of these agencies.

Federal Recreation Lands in Michigan

The 3.1 million acres of federal recreation lands in Michigan are managed by four agencies: the National Park Service, the U.S. Forest Service, the U.S. Fish and Wildlife Service, and the U.S. Army Corps of Engineers (Table 4-3). The national forests account for almost 90% (2.8 million acres) of the federal recreation land in the state.

National Park Service Areas

The National Park Service manages three areas in Michigan: Isle Royale National Park, Pictured Rocks National Lakeshore, and Sleeping Bear Dunes National Lakeshore (Table 4-4). Isle Royale National Park, the largest island in Lake Superior, comprises about 134,000 acres and is distinguished by its wilderness character, timber wolves, moose herd, and pre-Columbian copper mines. Pictured Rocks National Lakeshore, located in the Upper Peninsula, comprises about 36,000 acres. It consists of multi-colored sandstone cliffs, broad beaches, sand dunes, waterfalls, lakes, marshes, hardwood and coniferous forests, and an assortment of wildlife. Sleeping Bear Dunes National Lakeshore, located on Lake Michigan in the northern Lower Peninsula, covers about 55,000 acres and includes beaches, massive sand dunes, lakes, and two offshore islands.

National Forests

The U.S. Forest Service in Michigan administers various small special-purpose areas and four national forests: Hiawatha and Ottawa National Forests, located in the Upper Peninsula, and Huron and Manistee National Forests, located in the Lower Peninsula (Table 4-5). The

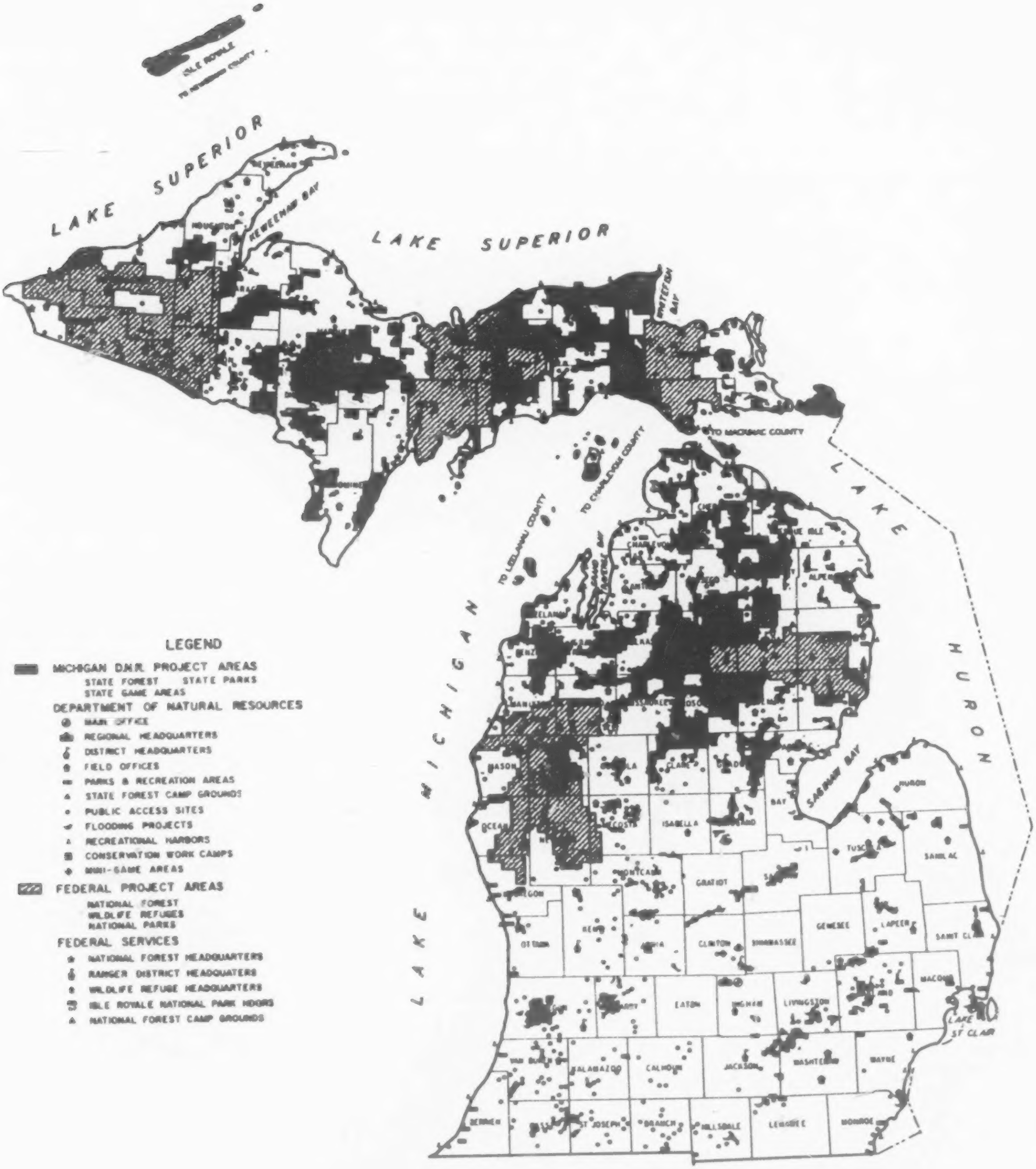

LAKE SUPERIOR
ISLE ROYALE
LAKE SUPERIOR
KEWEENAW BAY
WHITEFISH BAY
TO MACKINAC COUNTY
TO CHARLEVOIX COUNTY
TO LEELANAU COUNTY
LAKE MICHIGAN
LAKE HURON
SAGINAW BAY
LAKE ST CLAIR
HOUGHTON
MASON
OCEANA
ISABELLA
GRATIOT
CLINTON
EATON
LIVINGSTON
GENESEE
LAPEER
SANILAC
SAINT CLAIR
MACOMB
HURON
BAY
KALAMAZOO
CALHOUN
JACKSON
WASHTENAW
WAYNE
BERRIEN
ST JOSEPH
BRANCH
HILLSDALE
LENAWEE
MONROE
LEGEND
MICHIGAN D.N.R. PROJECT AREAS
STATE FOREST STATE PARKS
STATE GAME AREAS
DEPARTMENT OF NATURAL RESOURCES
MAIN OFFICE
REGIONAL HEADQUARTERS
DISTRICT HEADQUARTERS
FIELD OFFICES
PARKS & RECREATION AREAS
STATE FOREST CAMP GROUNDS
PUBLIC ACCESS SITES
FLOODING PROJECTS
RECREATIONAL HARBORS
CONSERVATION WORK CAMPS
MINI-GAME AREAS
FEDERAL PROJECT AREAS
NATIONAL FOREST
WILDLIFE REFUGES
NATIONAL PARKS
FEDERAL SERVICES
NATIONAL FOREST HEADQUARTERS
RANGER DISTRICT HEADQUATERS
WILDLIFE REFUGE HEADQUARTERS
ISLE ROYALE NATIONAL PARK HDQRS
NATIONAL FOREST CAMP GROUNDS

Figure 4-1. Federal and state lands in Michigan.

SOURCE: Michigan Department of Natural Resources. n.d. *Michigan's Forest Resources 1979: An Assessment*. Lansing: Michigan Department of Natural Resources.

Table 4-1. Acres of state and federal land available for recreation, by state.

STATE LANDS AVAILABLE FOR RECREATION[1]			FEDERAL LANDS AVAILABLE FOR RECREATION[2]			SUM OF STATE AND FEDERAL LANDS AVAILABLE FOR RECREATION		
Rank	State	Acres	Rank	State	Acres	Rank	State	Acres
1	AZ	9,294,564	1	AK	314,504,989	1	AK	321,792,627
2	AK	7,287,638	2	NV	56,492,121	2	NV	56,738,763
3	FL	7,106,240	3	CA	43,392,043	3	CA	45,076,128
4	ID	5,795,905	4	ID	32,959,990	4	ID	38,755,895
5	■ MI	4,294,676	5	UT	32,602,472	5	AZ	38,000,530
6	UT	3,966,805	6	OR	32,266,517	6	UT	36,569,277
7	MN	3,832,971	7	WY	30,704,825	7	OR	33,156,053
8	PA	3,647,576	8	AZ	28,705,966	8	WY	31,079,371
9	WA	3,053,203	9	MT	27,979,875	9	MT	28,842,349
10	NC	1,889,936	10	CO	23,700,733	10	CO	24,205,458
11	NY	1,758,390	11	NM	23,082,807	11	NM	23,365,857
12	CA	1,684,085	12	WA	11,760,136	12	WA	14,813,339
13	HI	1,602,258	13	FL	3,794,818	13	FL	10,901,058
14	WI	1,183,568	14	SD	3,525,870	14	■ MI	7,807,190
15	MA	1,103,198	15	■ MI	3,512,514	15	MN	7,334,646
16	OR	889,536	16	MN	3,501,675	16	PA	4,312,871
17	ND	880,005	17	AR	3,372,595	17	ND	3,976,310
18	MT	862,474	18	ND	3,096,305	18	NC	3,878,544
19	OK	824,599	19	TX	3,055,890	19	SD	3,766,975
20	TX	676,974	20	VA	2,168,454	20	AR	3,735,885
21	LA	649,871	21	MO	2,129,296	21	TX	3,732,864
22	ME	640,998	22	NC	1,988,608	22	WI	3,018,796
23	MO	542,489	23	WI	1,835,228	23	MO	2,671,785
24	CO	504,725	24	TN	1,781,508	24	VA	2,456,595
25	NJ	499,283	25	GA	1,748,742	25	OK	2,294,308
26	OH	490,151	26	MS	1,741,817	26	TN	2,220,967
27	KS	439,590	27	OK	1,469,709	27	HI	2,114,710
28	TN	439,459	28	KY	1,278,283	28	NY	1,844,127
29	WV	409,227	29	WV	1,122,681	29	GA	1,810,449
30	WY	374,546	30	LA	1,067,452	30	MS	1,764,307
31	AR	363,290	31	AL	1,008,998	31	LA	1,717,323
32	MD	325,897	32	SC	947,910	32	WV	1,531,908
33	IN	313,567	33	NH	735,117	33	KY	1,460,682
34	VA	288,141	34	PA	665,295	34	MA	1,166,799
35	NM	283,050	35	IL	622,781	35	AL	1,094,208
36	VT	256,481	36	NE	601,051	36	KS	1,038,089
37	NE	251,471	37	KS	598,499	37	SC	1,026,411
38	NV	246,642	38	HI	512,452	38	IL	861,796
39	SD	241,105	39	VT	342,136	39	NH	859,715
40	IL	239,015	40	IN	323,334	40	NE	852,522
41	IA	234,541	41	OH	316,852	41	OH	807,003
42	CT	190,160	42	IA	255,080	42	ME	779,314
43	KY	182,399	43	ME	138,316	43	IN	636,901
44	NH	124,598	44	NY	85,737	44	VT	598,617
45	AL	85,210	45	NJ	83,815	45	NJ	583,098
46	SC	78,501	46	MD	75,124	46	IA	489,621
47	GA	61,707	47	MA	63,601	47	MD	401,021
48	DE	49,242	48	DE	38,529	48	CT	202,594
49	RI	36,487	49	CT	12,434	49	DE	87,771
50	MS	22,490	50	DC	7,263	50	RI	37,832
51	DC	1,153	51	RI	1,345	51	DC	8,416
	US	70,500,087		US	707,779,588		US	778,279,675

[1] As of 1988. Data obtained from a survey conducted by Thomas J. Cieslinski of the Maine Department of Conservation. Figures include state parks, fish and wildlife units, state forests, historic sites, natural aquatic areas, roadside rest areas, boat sites, and certain conservation lands, reserved lots, and university lands. Figures do not include reservoirs, great ponds, water supplies, or agricultural, leased, or Indian lands except where acreage could not be separated from total.

[2] As of 1986. Data obtained from President's Commission on Americans Outdoors. 1986. "Supply Committee Working Papers." Washington, D.C.: Government Printing Office. Figures include lands managed by Forest Service, Fish and Wildlife Service, National Park Service, Bureau of Land Management, Army Corps of Engineers, Bureau of Reclamation, and Tennessee Valley Authority.

SOURCE: Riggs, James C. 1990. "Estimated State and Federal Lands for Recreation: State-By-State Listings." Parks Division, Texas Department of Parks and Wildlife. Austin.

Table 4-2. Michigan's national ranking with respect to federal and state recreation lands.

STATE RECREATION LAND	
Total acreage	5th
As a percent of land area of state	7th
Acres per 1,000 resident population (1988)	13th
FEDERAL RECREATION LAND	
Total acreage	15th
As a percent of land area of state	18th
Acres per 1,000 resident population (1988)	25th
FEDERAL AND STATE RECREATION LAND	
Total acreage	14th
As a percent of land area of state	18th
Acres per 1,000 resident population (1988)	20th

SOURCE: Riggs, James C. 1990. "Estimated State and Federal Lands for Recreation: State-By-State Listings." Parks Division, Texas Department of Parks and Wildlife. Austin.

Table 4-3. Total acreages of federal and state recreation lands in Michigan by management category, 1989.

Management Category	Acres	Percent of total
FEDERALLY-OWNED LANDS		
National forests	2,796,897	36.9
National parks and lakeshores	224,855	3.0
National wildlife refuges	111,211	1.5
Soo Locks	109	0.0
Subtotal	3,133,072	41.3
STATE-OWNED LANDS		
State forests	3,856,456	50.9
State game and wildlife areas	299,139	3.9
State parks and recreation areas	260,731	3.4
Boating and fishing sites	28,925	0.4
Subtotal	4,445,251	58.7
TOTAL	7,578,323	100.0

SOURCES: U.S. Forest Service. n.d. Land Areas of the National Forest System as of September 30, 1989. Report FS-383. Washington, D.C.: U.S. Forest Service.

U.S. Fish and Wildlife Service. n.d. Annual Report of Lands Under Control of the U.S. Fish and Wildlife Service as of September 30, 1989. Washington, D.C.: U.S. Fish and Wildlife Service.

Personal communication with National Park Service, U.S. Army Corps of Engineers, and MDNR offices.

Table 4-4. Acreages of Michigan units of the National Park System.

Unit	Federally-Owned Acres
Isle Royale National Park	133,780[a]
Sleeping Bear Dunes National Lakeshore	55,318
Pictured Rocks National Lakeshore	35,757
Total	224,855

[a] Includes 4-acre park headquarters on mainland in Houghton, Michigan.

NOTE: Figures do not include surface area of Great Lakes waters within unit boundaries.

SOURCE: Personal communications with National Park Service personnel.

Table 4-5. Acreages of Michigan units of the National Forest System.

National Forest	Location	Federally-Owned Acres
Ottawa	West Upper Peninsula	953,629
Hiawatha	East Upper Peninsula	879,945
Manistee	Northwest Lower Peninsula	530,489
Huron	Northeast Lower Peninsula	432,834
Total		2,796,897

SOURCE: U.S. Forest Service. n.d. Land Areas of the National Forest System as of September 30, 1989. Report FS-383. Washington, D.C.: U.S. Forest Service.

forests range in size from about 433,000 acres (Huron National Forest) to about 954,000 acres (Ottawa National Forest).

National Wildlife Refuges

The U.S. Fish and Wildlife Service manages seven national wildlife refuges in Michigan: Harbor Island, Huron, Kirtland Warbler, Michigan Islands, Seney, Shiawassee, and Wyandotte (Table 4-6). The total area of these refuges is 111,211 acres. Seney, the largest of the refuges, accounts for 86% of the total acreage; Shiawassee and Kirtland Warbler Refuges account for most of the remainder. All of the Huron Refuge and portions of the Michigan Islands and Seney Refuges are included in the National Wilderness Preservation System (discussed below).

The Soo Locks

The U.S. Army Corps of Engineers operates the Soo Locks at Sault Ste. Marie, Michigan. The opportunity to see huge ocean-going vessels pass through these locks annually attracts over 700,000 visitors, making the Locks one of the most heavily-visited tourist attractions in the state. Facilities for tourists include a viewing platform and visitor center.

State Recreation Lands in Michigan

There are four principal types of state recreation land in Michigan: (1) state forests, (2) state game and wildlife areas, (3) state parks and recreation areas, and (4) state boating and fishing sites. All are managed by the Michigan Department of Natural Resources. Of the 4.4 million acres of state recreation lands, 87% (about 3.8 million acres) are contained within state forests. The remaining acreage is distributed as follows: 7% (about 300,000 acres) are in state game and wildlife areas; 6% (about 261,000 acres) are in state parks and recreation areas; and less than 1% (about 29,000 acres) are in state boating and fishing sites. A description of these lands and the MDNR divisions that manage them follows.

State Forests

MDNR's Forest Management Division is charged with managing, in cooperation with other divisions, the more than 3.8 million acres of state forest land spread over the northern two-thirds of the state (Table 4-7). Recreation facilities include 150 campgrounds accessible by motor vehicle, a number of backcountry campgrounds, 1,500 miles of snowmobile trail, 228 miles of cross-country ski trail, 575 miles of hiking trail, and numerous boat launches and swimming areas. About 20% of state forest lands were purchased with hunting license sale revenues. The state forest system includes Fuller Woods (in Van Buren County) and six forests which, in descending order of size are: Lake Superior, Au Sable, Mackinaw, Pere Marquette, Copper Country, and Escanaba River.

State Game and Wildlife Areas

Michigan's wildlife are held in trust by the state for the benefit of its citizens. The MDNR's Wildlife Division is charged to act as trustee and manages state game and wildlife areas for wildlife habitat and wildlife-related recreation. Wildlife Division manages 52 game areas and seven wildlife areas totaling nearly 300,000 acres. Most of these areas are located in

Table 4-6. Acreages of Michigan units of the National Wildlife Refuge System.

National Wildlife Refuge	Federally-Owned Acres
Seney	95,455
Shiawassee	8,984
Kirtland Warbler	5,263
Harbor Island	695
Michigan Islands	363
Wyandotte	304
Huron	147
Total	111,211

SOURCE: U.S. Fish and Wildlife Service. n.d. Annual Report of Lands Under Control of the U.S. Fish and Wildlife Service as of September 30, 1989. Washington, D.C.: U.S. Fish and Wildlife Service.

Table 4-7. Acreages of units of Michigan's state forest system.

Management Unit	Acres
State Forests	
Lake Superior	1,041,871
Au Sable	731,466
Mackinaw	703,802
Pere Marquette	525,359
Copper Country	436,346
Escanaba River	417,530
Fuller Woods (Van Buren County)	82
Total	3,856,456

SOURCE: Forest Management Division, MDNR.

southern Lower Michigan and are less than 10,000 acres in size. The largest areas are Allegan State Game Area (about 44,500 acres) and Barry and Gratiot-Saginaw State Game Areas (about 15,000 acres each). The smallest area is Leidy Lake State Game Area, comprising 107 acres.

State Parks and Recreation Areas

Michigan's state parks and state recreation areas preserve and make available for public use open spaces for recreation, areas of natural beauty and significance, and historic sites. All but three of these parks/areas are administered by the MDNR's Parks Division. The other three (Michilimackinac State Historic Park, Mackinac Island State Park, and Mill Creek State Historic Park) are administered by the Mackinac Island State Park Commission. Most state parks are unbroken blocks of land with one entrance and exit point, whereas most state recreation areas consist of numerous blocks of public open space intermingled with private land.

Parks Division manages over 260,000 acres of land in 67 state parks, 17 state recreation areas, two state trails, three scenic/historic sites, and eight unadministered units. These lands include 115 miles of Great Lakes shoreline and 200 miles of frontage on inland lakes and streams. Among the facilities provided are 14,000 campsites, 373 miles of hiking trail, five outdoor centers, trailside cabins, and frontier cabins. Most campgrounds are modern, with flush toilets, hot showers, and electric hook-ups at campsites.

State parks and recreation areas provide facilities for a great variety of recreation activities, including camping, swimming, sunbathing, horseback riding, hiking, boating, cross-country skiing, fishing, nature study, pleasure driving, and enjoyment of historical features. Some parks also provide opportunities for hunting, skill shooting, snowmobiling, and downhill skiing. Most parks contain unique natural features of statewide significance. Many preserve historical features of statewide or multi-state significance. Others preserve lands with open space, recreation, and educational value. Further information on state parks, including the acreages of individual units, is presented in Chapter 13.

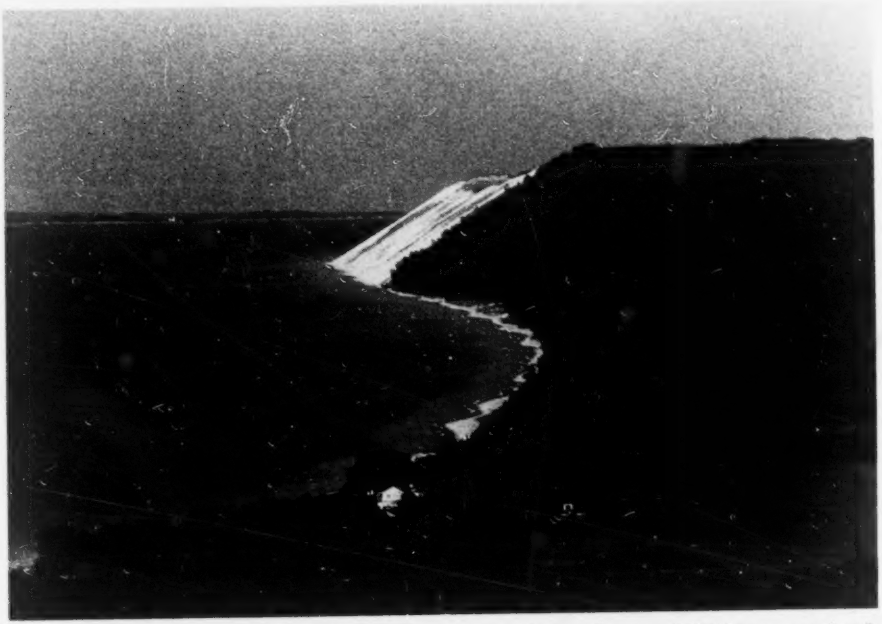
State Boating and Fishing Sites

MDNR's Recreation and Fisheries Divisions administer several hundred boating and fishing sites across the state which total about 29,000 acres of land. These sites provide public access to the Great Lakes and inland lakes, rivers, and streams. The acreage of these sites is less important than the millions of acres of surface waters to which they provide access.

Federal and State Recreation Lands in Michigan's Counties

Each of Michigan's 83 counties contain federal and/or state recreation lands (Table 4-8). However, the acreage of such lands is heavily concentrated in the Upper and northern Lower Peninsulas (Figure 4-2). Schoolcraft County contains the most acreage of federal and state recreation lands (over 500,000 acres) and also contains the highest percentage of total county area in federal or state recreation lands (65%).

Pictured Rocks National Lakeshore, in Michigan's Upper Peninsula, was the first national lakeshore established by Congress.



Sleeping Bear Dunes National Lakeshore, in northwest Lower Michigan, received over a million visits in 1990.

Table 4-8. Number of acres of federal and state recreation land by administrative category by Michigan county, 1989.

	FEDERAL LANDS					STATE LANDS						
COUNTY	National Parks and Lakeshores	National Wildlife Refuges	National Forests	Soo Locks	Federal Total	State Parks/ Rec. Areas	State Boating/Fishing Sites	State Game/ Wildlife Areas	State Forests	State Total	Total Federal and State Lands	Federal/ State Land as a % of Total Area of County
Alcona	0	0	112,299	0	112,299	549	80	0	8,196	8,826	121,125	27.2
Alger	35,757	0	114,569	0	150,326	983	693	1,588	93,625	96,889	247,215	40.7
Allegan	0	0	0	0	0	909	1,276	44,543	0	46,727	46,727	8.7
Alpena	0	182	0	0	182	1,270	127	0	43,615	45,013	45,195	11.7
Antrim	0	0	0	0	0	0	632	0	43,813	44,445	44,445	13.2
Arenac	0	0	0	0	0	0	109	200	28,465	28,774	28,774	12.1
Baraga	0	147	44,593	0	44,740	7,593	1,137	0	69,764	78,495	123,235	20.7
Barry	0	0	11	0	11	5,000	62	18,385	0	23,447	23,458	6.4
Bay	0	0	0	0	0	143	247	4,133	0	4,524	4,524	1.6
Benzie	10,991	0	0	0	10,991	0	400	697	59,941	61,039	72,030	32.3
Berrien	0	0	0	0	0	2,066	104	42	0	2,212	2,212	0.6
Branch	0	0	0	0	0	413	39	0	0	452	452	0.1
Calhoun	0	0	0	0	0	0	27	0	0	27	27	0.0
Cass	0	0	0	0	0	0	81	3,530	0	3,612	3,612	1.1
Charlevoix	0	0	0	0	0	3,188	506	9,985	44,389	58,067	58,067	19.8
Cheboygan	0	0	32	0	32	1,430	780	0	180,579	182,789	182,821	35.8
Chippewa	0	0	243,852	109	243,961	26,228	1,147	0	185,940	213,316	457,277	40.3
Clare	0	0	0	0	0	36	318	0	51,252	51,606	51,606	14.0
Clinton	0	0	0	0	0	2,678	5	6,634	0	9,317	9,317	2.5
Crawford	0	5,263	37,833	0	43,096	9,724	154	0	166,620	176,498	219,594	60.9
Delta	0	0	241,601	0	241,601	712	634	0	66,331	67,676	309,277	40.3
Dickinson	0	0	0	0	0	0	1,389	0	221,673	223,062	223,062	44.8
Eaton	0	0	0	0	0	0	9	224	0	233	233	0.1
Emmett	0	181	0	0	181	7,871	311	0	67,453	75,635	75,816	24.5
Genesee	0	0	8	0	8	0	52	12	0	64	72	0.0
Gladwin	0	0	0	0	0	365	373	0	85,732	86,469	86,469	26.2
Gogebic	0	0	309,777	0	309,777	9,767	526	0	499	10,792	320,569	43.8
Gr. Traverse	0	0	2	0	2	746	188	462	65,786	67,182	67,184	21.2
Gratiot	0	0	0	0	0	0	85	13,312	0	13,397	13,397	3.7
Hillsdale	0	0	0	0	0	0	14	2,554	0	2,568	2,568	0.7
Houghton	4	0	156,589	0	156,593	512	521	0	44,218	45,251	201,844	30.2
Huron	0	0	0	0	0	1,278	152	11,079	0	12,510	12,510	2.3
Ingham	0	0	0	0	0	34	112	4,345	0	4,492	4,492	1.3
Ionia	0	0	0	0	0	4,018	194	6,080	0	10,291	10,291	2.8
Iosco	0	0	112,191	0	112,191	70	81	0	24,907	25,058	137,249	37.9
Iron	0	0	172,884	0	172,884	316	2,845	0	79,428	82,589	255,473	33.0
Isabella	0	0	0	0	0	0	4	160	1,820	1,984	1,984	0.5
Jackson	0	0	0	0	0	12,963	79	2,370	0	15,412	15,412	3.3
Kalamazoo	0	0	0	0	0	3,086	72	2,768	0	5,926	5,926	1.6
Kalkaska	0	0	0	0	0	0	129	0	154,556	154,685	154,685	42.4
Kent	0	0	0	0	0	0	250	8,012	0	8,263	8,263	1.5
Keweenaw	133,776	0	0	0	133,776	189	7	0	4,416	4,612	138,388	36.5
Lake	0	0	111,708	0	111,708	0	464	0	59,507	59,971	171,679	46.7

Lapeer	0	0	0	0	0	4,061	0	8,389	0	12,449	12,449	2.9
Leelanau	44,327	0	0	0	44,327	1,262	24	1,230	4,993	7,508	51,835	22.1
Lenawee	0	0	0	0	0	3,498	107	614	0	4,219	4,219	0.9
Livingston	0	0	0	0	0	12,059	21	5,499	0	17,579	17,579	4.7
Luce	0	0	0	0	0	10,688	262	0	285,962	296,912	296,912	50.0
Mackinac	0	695	151,552	0	152,247	1,951	487	0	203,473	205,911	358,158	51.2
Macomb	0	0	0	0	0	1,984	36	119	0	2,139	2,139	0.7
Manistee	0	0	86,285	0	86,285	201	163	3,634	20,102	24,100	110,385	30.9
Marquette	0	0	18,080	0	18,080	1,124	4,192	0	255,663	260,979	279,059	23.3
Mason	0	0	59,501	0	59,501	4,116	1,335	230	0	5,680	65,181	19.9
Mecosta	0	0	2,534	0	2,534	0	92	12,588	0	12,680	15,214	4.2
Menominee	0	0	0	0	0	650	527	0	91,725	92,902	92,902	13.8
Midland	0	0	0	0	0	0	86	0	41,867	41,953	41,953	12.4
Missaukee	0	0	0	0	0	0	8	6,517	94,342	100,866	100,866	27.5
Monroe	0	0	0	0	0	1,035	110	5,989	0	7,134	7,134	2.0
Montcalm	0	0	1,760	0	1,760	0	317	19,997	0	20,314	22,074	4.8
Montmorency	0	0	0	0	0	290	73	0	134,089	134,451	134,451	37.4
Muskegon	0	0	12,621	0	12,621	2,541	4	8,597	0	11,142	23,763	7.0
Newaygo	0	0	108,535	0	108,535	0	931	4,473	0	5,403	113,938	20.7
Oakland	0	0	0	0	0	28,062	281	342	0	28,684	28,684	4.9
Oceana	0	0	52,697	0	52,697	2,871	66	2,359	0	5,296	57,993	16.6
Ogemaw	0	0	20,103	0	20,103	4,329	528	0	71,980	76,837	96,940	26.3
Ontonagon	0	0	257,612	0	257,612	49,610	77	0	16,351	66,038	323,650	38.1
Osceola	0	0	0	0	0	0	493	366	17,791	18,650	18,650	5.1
Oscoda	0	0	150,408	0	150,408	0	10	0	56,032	56,042	206,450	56.4
Otsego	0	0	4	0	4	62	292	0	99,310	99,664	99,668	29.6
Ottawa	0	0	0	0	0	376	9	1,558	0	1,944	1,944	0.5
Presque Isle	0	0	0	0	0	5822	284	0	80,454	86,560	86,560	19.7
Roscommon	0	0	0	0	0	960	3	7,745	194,575	203,283	203,283	54.8
Saginaw	0	8,984	0	0	8,984	0	14	14,758	0	14,772	23,756	4.6
Saint Clair	0	0	0	0	0	1,862	7	10,301	0	12,171	12,171	2.5
Saint Joseph	0	0	0	0	0	0	37	2,216	0	2,253	2,253	0.7
Sanilac	0	0	0	0	0	238	3	8,223	0	8,465	8,465	1.4
Schoolcraft	0	95,455	122,433	0	217,888	956	953	0	286,783	288,693	506,581	64.8
Shiawassee	0	0	0	0	0	0	0	914	0	914	914	0.3
Tuscola	0	0	0	0	0	0	0	29,337	0	29,337	29,337	5.6
Van Buren	0	0	0	0	0	661	414	370	82	1,527	1,527	0.4
Washtenaw	0	0	0	0	0	14,134	60	1,148	0	15,342	15,342	3.3
Wayne	0	304	0	0	304	944	18	509	0	1,471	1,775	0.4
Wexford	0	0	94,823	0	94,823	248	184	0	48,340	48,772	143,595	38.9
Total	224,855	111,211	2,796,897	109	3,133,072	260,731	28,925	299,139	3,856,456	4,445,251	7,578,323	20.2

NOTE: National Forests column excludes land utilization projects and purchase units. State Parks/Recreation Areas column includes unadministered units of the state park system and excludes the MacMullen Center. Details may not add to totals due to rounding error.

SOURCES: U.S. Forest Service. n.d. Land Areas of the National Forest System as of September 30, 1989. Report FS-383. Washington, D.C.: U.S. Forest Service.

U.S. Fish and Wildlife Service. n.d. Annual Report of Lands Under Control of the U.S. Fish and Wildlife Service as of September 30, 1989. Washington, D.C.: U.S. Fish and Wildlife Service.

Personal communication with National Park Service, U.S. Army Corps of Engineers, and MDNR offices.

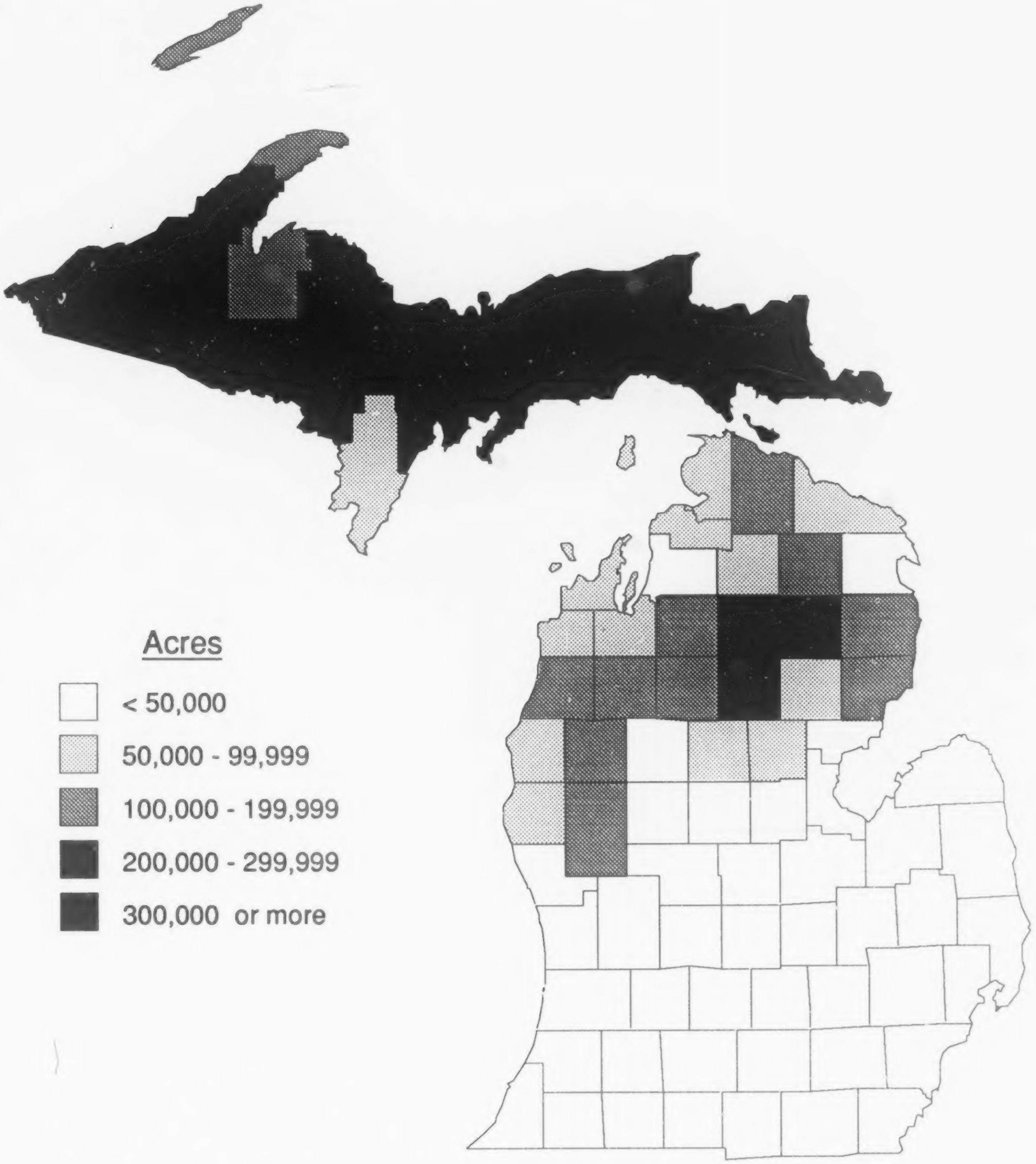

Acres
< 50,000
50,000 - 99,999
100,000 - 199,999
200,000 - 299,999
300,000 or more

Figure 4-2. Total acreage of federal and state recreation land by Michigan county, 1989.

The top three counties and their acreages for each administrative category are listed below:

Total federal and state recreation land: Schoolcraft (506,581), Chippewa (457,277), Mackinac (358,158).
Total federal recreation land: Gogebic (309,777), Ontonagon (257,612), Chippewa (243,961).
National park/lakeshore land: Keweenaw (133,776), Leelanau (44,327), Alger (35,757).
National wildlife refuge land: Schoolcraft (95,455), Saginaw (8,984), Crawford (5,263).
National forest land: Gogebic (309,777), Ontonagon (257,612), Chippewa (243,852).
Total state recreation land: Luce (296,912), Schoolcraft (288,693), Marquette (260,979).
State park and recreation area land: Ontonagon (49,610), Oakland (28,062), Chippewa (26,228).
Boating and fishing site land: Marquette (4,192), Iron (2,845), Dickinson (1,389).
State game/wildlife area land: Allegan (44,543), Tuscola (29,337), Montcalm (19,997).
State forest land: Schoolcraft (286,783), Luce (285,962), Marquette (255,663).

While most counties contain land in at least two categories, Crawford County has the most varied combination of recreation land type and acreage. It contains over 166,000 acres of state forest land, 37,000 acres of national forest lands, 9,700 acres of state parks/recreation areas, 5,000 acres of national wildlife refuge lands, and 150 acres of boating and fishing sites.

Specially Designated Areas

A wide variety of areas in Michigan have been designated under federal and state statutes which serve to protect their special natural values or features. Many of these areas are located on or adjacent to the federal and state recreation lands discussed above. Others are on, or include, private and local government lands. These designations include:

--national wilderness areas;
--national natural landmarks;
--national wild and scenic rivers;
--state wilderness, wild, and natural areas;
--state natural rivers; and
--Great Lakes bottomland preserves.

The Michigan lands in each of these categories are discussed in turn below.

Federally Designated Areas

National Wilderness Areas

The Wilderness Act of 1964 (P.L. 88-577) protects designated areas of federal land from activities which might threaten their wilderness character. Wilderness is defined in the Act as an area of undeveloped federal land "which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value." Fourteen areas in Michigan totaling nearly 250,000 acres of land have been designated as wilderness under the Act. More than half of this acreage is within Isle Royale National Park (Table 4-9; Figure 4-3).

National Natural Landmarks

The National Natural Landmarks Program was established in 1962 by the Secretary of the Interior to identify and encourage the preservation of nationally significant examples of the full array of ecological and geological features that represent the Nation's natural heritage. Potential natural landmarks are identified through studies conducted by the National Park Service, evaluated by natural scientists, and, if judged nationally significant, designated as national natural landmarks by the Secretary of the Interior. The program is administered by the National Park Service.

Sites designated under the program may be in private ownership or any form of public ownership. Natural landmark designation is not a land withdrawal and affects neither the ownership nor management and use of a site. Preservation of the site is often ensured through the cooperative commitment of public and private owners toward protection of the area's features. This commitment is voluntary and is exercised through a nonbinding agreement with the National Park Service to protect the site. Twelve sites in Michigan have been designated under the Program (Figure 4-3). Some of these sites have also been designated under the provisions of the state's Wilderness and Natural Areas Act, described below.

National Wild and Scenic Rivers

The Wild and Scenic Rivers Act of 1968 (P.L. 90-542) created the National Wild and Scenic Rivers System to preserve selected rivers in their free-flowing condition and to protect their immediate environments for the benefit and enjoyment of present and future generations. For a river to be included in the system, it must possess "outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values." Segments of two Michigan rivers totaling 89 miles are included in the System: a 66-mile portion of the Pere Marquette River and a 23-mile portion of the Au Sable River (Figure 4-4).

State Designated Areas

State Wilderness, Wild, and Natural Areas

Michigan's Wilderness and Natural Areas Act (Act 241, P.A. 1972) is quite similar to the federal Wilderness Act of 1964. It protects certain state lands from development and specifies activities which may occur within these designated areas. Three land use designations are specified in the Act: (1) wilderness areas, (2) wild areas, and (3) natural areas. Wilderness areas are tracts of undeveloped state land administered by the MDNR. Such areas must: (1) have at least 3,000 acres, or be an island of any size; (2) generally appear to have been affected primarily by forces of nature, with the imprint of man's work substantially unnoticeable; (3) have outstanding opportunities for solitude or a primitive and unconfined type of recreation; and (4) contain ecological, geological or other features of scientific, scenic, or historical value. Criteria 2, 3, and 4 were drawn verbatim from the federal Wilderness Act.

Wild areas are distinguished from wilderness areas primarily by size, being less than 3,000 acres. In addition, they must have "outstanding opportunities for personal exploration, challenge, or contact with natural features of the landscape and its biological community." Further, they must meet one of the criteria--2, 3, or 4--for wilderness areas. As far as

Table 4-9. Federally-designated wilderness areas in Michigan by management agency, 1989.

Management Agency/ Wilderness Name	Management Unit	Year Designated	Acres
U.S. Forest Service			
Sylvania	Ottawa National Forest	1987	18,327
McCormick	Ottawa National Forest	1987	16,850
Sturgeon River Gorge	Ottawa National Forest	1987	14,500
Mackinac	Hiawatha National Forest	1987	12,230
Delirium	Hiawatha National Forest	1987	11,870
Big Island Lake	Hiawatha National Forest	1987	5,840
Rock River Canyon	Hiawatha National Forest	1987	4,640
Horseshoe Bay	Hiawatha National Forest	1987	3,790
Nordhouse Dunes	Manistee National Forest	1987	3,450
Round Island	Hiawatha National Forest	1987	378
Subtotal			91,875
U.S. Fish and Wildlife Service			
Seney	Seney National Wildlife Refuge	1970	25,150
Huron Islands	Huron National Wildlife Refuge	1970	147
Michigan Islands	Mich. Islands Nat'l Wildlife Refuge	1970	12
Subtotal			25,309
U.S. National Park Service			
Isle Royale	Isle Royale National Park	1976	131,880
TOTAL			249,064

SOURCES: Hendee, John C., George H. Stankey, and Robert C. Lucas. 1990. *Wilderness Management*. Second edition. Golden, CO: North American Press.

U.S. Fish and Wildlife Service. n.d. *Annual Report of Lands Under Control of the U.S. Fish and Wildlife Service as of September 30, 1989*. Washington, D.C.: U.S. Fish and Wildlife Service.

U.S. Forest Service. n.d. *Land Areas of the National Forest System as of September 30, 1989*. Report FS-383. Washington, D.C.: U.S. Forest Service.

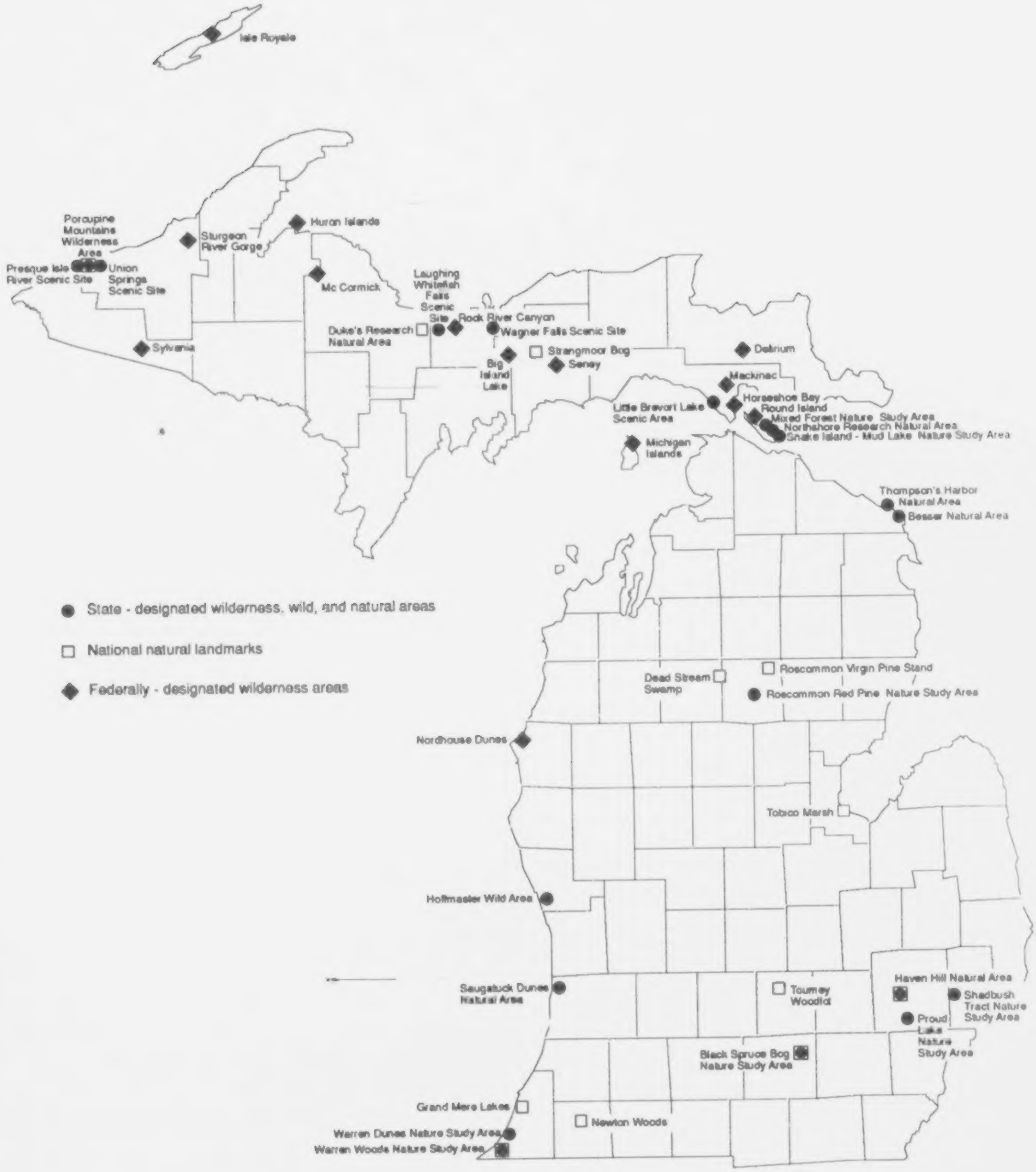

Isle Royale
Porcupine Mountains Wilderness Area
Presque Isle River Scenic Site
Union Springs Scenic Site
Sturgeon River Gorge
Huron Islands
Mc Cormick
Sylvania
Laughing Whitefish Falls Scenic Site
Duke's Research Natural Area
Rock River Canyon
Wagner Falls Scenic Site
Strangmoor Bog
Big Island Lake
Seney
Delirium
Mackinac
Little Brevort Lake Scenic Area
Horseshoe Bay
Round Island
Mixed Forest Nature Study Area
Northshore Research Natural Area
Snake Island - Mud Lake Nature Study Area
Michigan Islands
Thompson's Harbor Natural Area
Besser Natural Area
● State - designated wilderness, wild, and natural areas
☐ National natural landmarks
◆ Federally - designated wilderness areas
Dead Stream Swamp
Roscommon Virgin Pine Stand
Roscommon Red Pine Nature Study Area
Nordhouse Dunes
Tobico Marsh
Hoffmaster Wild Area
Saugatuck Dunes Natural Area
Toumey Woodlot
Haven Hill Natural Area
Shadbush Tract Nature Study Area
Proud Lake Nature Study Area
Black Spruce Bog Nature Study Area
Grand Mere Lakes
Newton Woods
Warren Dunes Nature Study Area
Warren Woods Nature Study Area

Figure 4-3. Designated natural areas in Michigan.

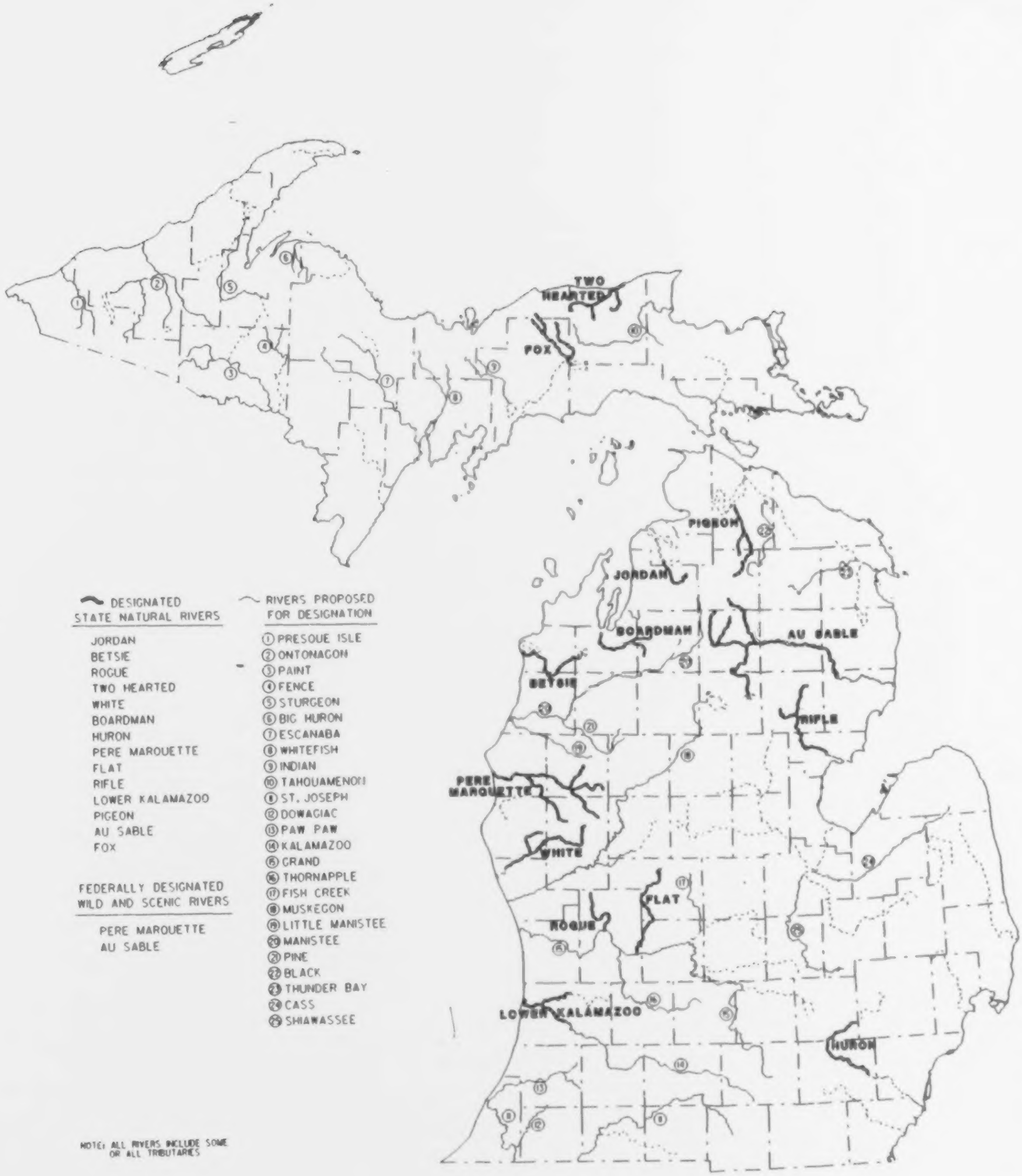

DESIGNATED STATE NATURAL RIVERS
JORDAN
BETSIE
ROGUE
TWO HEARTED
WHITE
BOARDMAN
HURON
PERE MARQUETTE
FLAT
RIFLE
LOWER KALAMAZOO
PIGEON
AU SABLE
FOX
FEDERALLY DESIGNATED WILD AND SCENIC RIVERS
PERE MARQUETTE
AU SABLE
RIVERS PROPOSED FOR DESIGNATION
① PRESQUE ISLE
② ONTONAGON
③ PAINT
④ FENCE
⑤ STURGEON
⑥ BIG HURON
⑦ ESCANABA
⑧ WHITEFISH
⑨ INDIAN
⑩ TAHQUAMENON
⑪ ST. JOSEPH
⑫ DOWAGIAC
⑬ PAW PAW
⑭ KALAMAZOO
⑮ GRAND
⑯ THORNAPPLE
⑰ FISH CREEK
⑱ MUSKEGON
⑲ LITTLE MANISTEE
⑳ MANISTEE
㉑ PINE
㉒ BLACK
㉓ THUNDER BAY
㉔ CASS
㉕ SHIAWASSEE
NOTE: ALL RIVERS INCLUDE SOME OR ALL TRIBUTARIES
TWO HEARTED
FOX
PIGEON
JORDAN
BOARDMAN
AU SABLE
BETSIE
RIFLE
PERE MARQUETTE
WHITE
FLAT
ROGUE
LOWER KALAMAZOO
HURON

Figure 4-4. Michigan's natural rivers system.

SOURCE: Michigan Department of Natural Resources.

possible, such areas are to be established near urban centers with populations over 100,000.

Finally, natural areas are state lands that have retained or reestablished their natural character or possess unusual flora, fauna, or biotic, geologic, scenic, or other features of educational or scientific value. They may be part of an existing state wilderness or wild area.

At present, 20 areas totaling 53,524 acres have been designated under the Act (Figure 4-3). However, 46,246 acres of this total are contained in the Porcupine Mountains Wilderness within Porcupine Mountains Wilderness State Park in the Upper Peninsula. The remaining areas include a wild area comprising 246 acres and 18 natural areas totaling 7,032 acres.

State Natural Rivers

Michigan's Natural River Act (Act 231, P.A. 1970) provides for the designation of a river or portion thereof as a natural river area "for the purpose of preserving and enhancing its values for water conservation, its free flowing condition and its fish, wildlife, boating, scenic, aesthetic, flood plain, ecologic, historic and recreational values and uses." The Act specifies that a river so designated "shall be permanently managed for the preservation or enhancement of such values." Fourteen river segments totaling 1,698 miles have been designated and an additional 25 segments have been proposed for designation (Figure 4-4).

Great Lakes Bottomland Preserves

About 40% of Michigan's total surface area consists of Great Lakes waters. The State controls almost all of the bottomlands under these waters. These bottomlands contain an estimated 6,000 or more shipwrecks which, due to the preservation qualities of cold fresh water, are in remarkably good condition and have become a magnet for sport divers. State legislation has been enacted (Act 184, P.A. 1980) to preserve and protect property of cultural and recreational value on the bottomlands. Nine bottomland preserves totaling 1,313,280 acres have been authorized. The nine preserves and their associated acreages are: Alger County (72,320 acres), Keweenaw (155,520 acres), Manitou Passage (180,480 acres), Marquette County (104,320 acres), Sanilac Shores (104,320 acres), Straits of Mackinac (94,720 acres), Thumb Area (176,640 acres), Thunder Bay (184,320 acres), and Whitefish Point (240,640 acres) (Figure 4-5). In addition to these state-administered preserves, Isle Royale National Park includes a 438,008-acre bottomland preserve surrounding the island. Thus altogether Michigan has a total of ten bottomland preserves with a combined area of 1,751,288 acres.

Summary

Michigan ranks high among the states in the supply of federal and state recreation lands. The state ranks fifth in state acreage, fifteenth in federal acreage, and fourteenth in total acreage. Among the Great Lakes states, Michigan ranks highest with respect to each measure of comparison.

There are 7.6 million acres of federal and state recreation land in Michigan, most of which are concentrated in the Upper and northern Lower Peninsulas. Federal lands account for over 3.1 million acres and state lands account for over 4.4 million. The federal lands include national forests (2.8 million acres), national parks/lakeshores (over 200,000 acres), national wildlife refuges (over 100,000 acres), and the Soo Locks. The state lands include state forests (over 3.8 million acres), state game/wildlife areas (nearly 300,000 acres), state parks/recreation areas (260,000 acres), and state boating and fishing sites (nearly 30,000 acres).

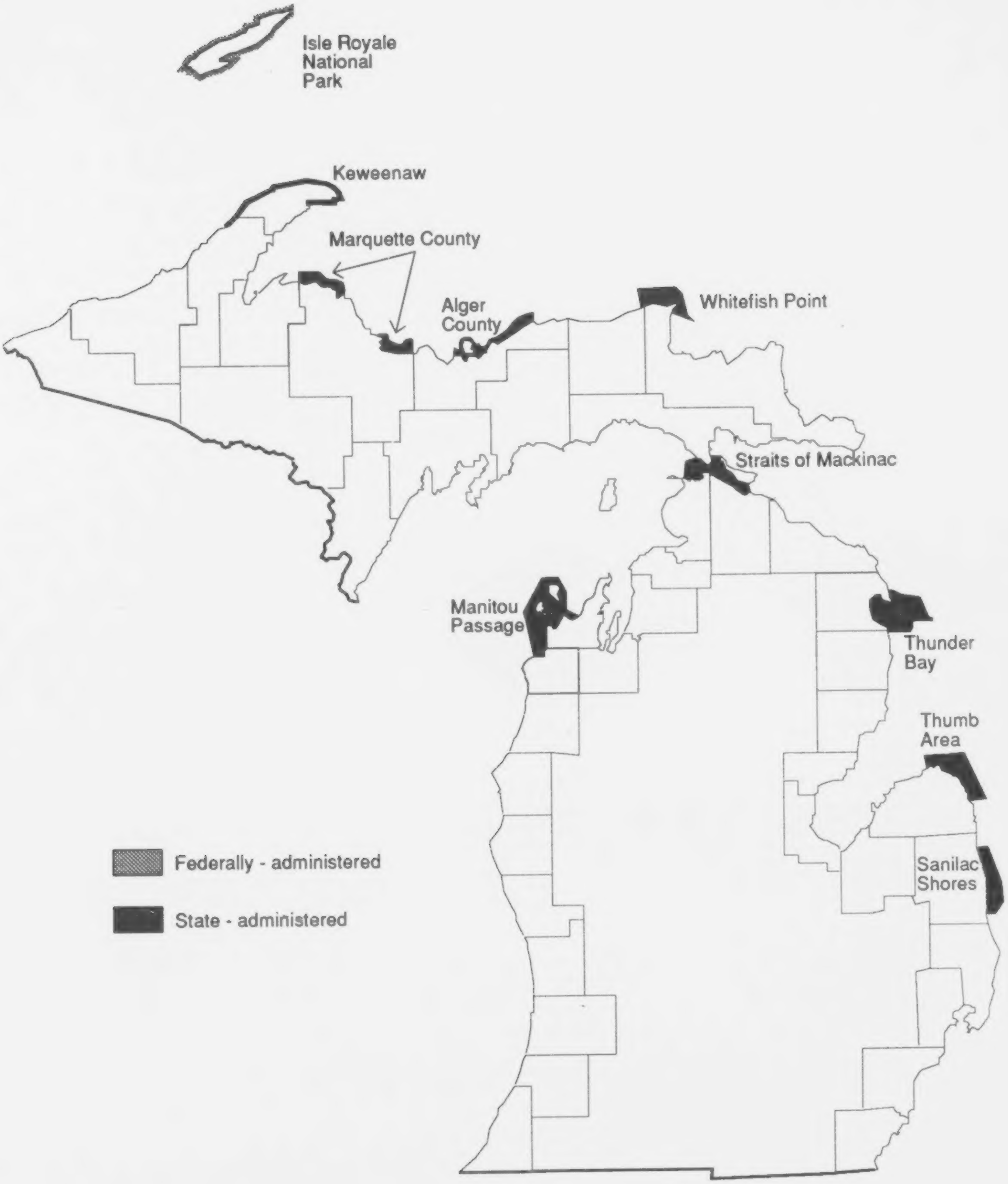

Isle Royale National Park
Keweenaw
Marquette County
Alger County
Whitefish Point
Straits of Mackinac
Manitou Passage
Thunder Bay
Thumb Area
Sanilac Shores
▨ Federally - administered
■ State - administered

Figure 4-5. Great Lakes bottomland preserves in Michigan.

SOURCE: Michigan Department of Natural Resources.

National and state forest lands account for almost 90% of the total acreage. However, recreation is only one of several uses of these multiple-use lands.

Various lands in Michigan have been given special designation under federal and state statutes. Michigan has 14 federally-designated wilderness areas totaling nearly 250,000 acres, 12 national natural landmarks, two national wild and scenic rivers totaling 89 river-miles, 20 state-designated wilderness, wild, and natural areas totaling over 53,000 acres, 14 state natural rivers totaling 1,698 river-miles, and ten Great Lakes bottomland preserves totaling 1.7 million acres.

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CHAPTER 5

HIGHWAY AND AIR PASSENGER TRAFFIC FLOWS IN MICHIGAN

Daniel M. Spotts

Introduction

Many planning and marketing decisions in the travel and tourism industry require an understanding of trends and patterns in traffic volumes. To provide some assistance with such decisions, this chapter documents the volume of highway and air travel at various locations throughout the state. Statistics are presented for the period 1985-90. Statistics pertaining to 1991 and subsequent years may be found in the TTRRC's travel monitoring reports.

Highway Traffic Flows

Nature and Limitations of Data

According to the U.S. Travel Data Center, 89% of the person-trips to and through Michigan involve the use of personal vehicles (Table 3-2; page 24). Consequently, highway traffic counts provide useful insights into travel volume at specific locations. In fact, highway traffic volume is the most comprehensive indicator of travel activity available in Michigan, since all other indicators deal with narrower subsets of travel. For example, both state park overnight stays and hotel/motel use tax collections reflect only overnight travel, whereas highway traffic volume accounts for day trips as well as overnight trips. The principal limitation of highway traffic counts is that an unknown proportion of the traffic at a given location can be attributed to travel by local residents on shopping, commuting, or other types of trips. With respect to the statistics presented in this chapter, this limitation is serious in the case of traffic counts pertaining to the International Bridge, the Blue Water Bridge, and the Detroit-Windsor Tunnel, and less so in the case of traffic counts pertaining to other highway segments since the latter are in rural areas beyond the immediate outskirts of major cities.

Two types of indicators are presented in this section: (1) the actual number of vehicles counted at specific highway locations during a given month or year, or "raw traffic counts," and (2) average daily traffic counts (ADTs) at specific highway locations during a given month or year. Raw traffic counts are useful in documenting the total volume of traffic at a given location. However, comparisons of such counts across months or years are somewhat problematic because differences in the counts may be due to disparities in the number of weekend days in one month or year versus another, especially since much recreational travel takes place on weekends. Similar difficulties result from leap years and holiday weekends that may be wholly within a month in one year but only partially within that month in another year. Because of these problems, it is advantageous to use ADTs in making comparisons of traffic volumes across months or years. ADTs are derived by calculating the average traffic volume occurring on weekdays, Saturdays, and Sundays within a given time period, such as a month or year, and then inserting these values in the following formula:

$$\text{ADT}_i = \frac{(\text{average weekday}_i \times 5) + \text{average Saturday}_i + \text{average Sunday}_i}{7}$$

where i = time period

By averaging traffic volumes on both weekdays and weekends, this procedure tends to mitigate the effects of disparities in the number of weekend days occurring in one time period versus another.

The data used to calculate ADTs are obtained from permanent traffic recorder (PTR) stations operated by the Michigan Department of Transportation. These stations count the number of vehicles crossing selected highway segments using electronic hardware in the pavement.

Trends and Patterns in Highway Traffic Volume

Mackinac Bridge crossings are a familiar indicator of traffic volume in Michigan's travel and tourism industry. The total number of vehicles crossing the Mackinac Bridge has increased from 1.4 million in 1958 to 3.4 million in 1990 (Table 5-1). This growth has been gradual, and in general changes in the volume of crossings from one year to the next have not exceeded plus or minus 10%. Consistency in crossings is also evident in the regular peaking of overall traffic in July or August, the climax of Michigan's summer tourist season (Table 5-2).

Crossings of three of the links between Michigan and Ontario -- the Detroit-Windsor Tunnel, the International Bridge, and the Blue Water Bridge -- have also increased in recent years (Tables 5-3 and 5-5). However, it is impossible to determine solely from these indicators whether the net flow of travelers from Canada to Michigan has increased or decreased. Moreover, a portion of the increased crossings of these links has resulted from heightened commuter traffic between the twin cities on either side of the links.

The locations of each of the PTR stations on rural highways in Michigan are described in Table 5-4. Annual ADTs for each of these stations are presented in Table 5-5 to provide an indication of trends in highway traffic at specific locations. Monthly ADTs for 1990 are presented in Table 5-6 to provide an indication of seasonal fluctuations in highway traffic at these locations.

Air Passenger Traffic Flows

Statistics on annual and monthly air passenger traffic at each of the airports providing scheduled air carrier service in Michigan (Figure 5-1) are presented in Tables 5-7 and 5-8. These statistics are total passenger volumes, i.e., the sum of the number of enplaned and deplaned passengers at each airport.

The statistics presented in Table 5-7 show that air passenger traffic in Michigan steadily increased between 1985 and 1990. However, these statistics indicate only that more people flew into, within, and/or out of Michigan during this period, and not necessarily that increased travel to Michigan occurred. Whether more nonresidents flew into the state, or more Michiganians flew within or out of the state, or some combination of these possibilities, cannot be surmised from these statistics alone. Nor could the desired information be obtained from statistics on deplanements, since an increase in the latter could result as much from an increase in the number of Michiganians returning from trips to out-of-state destinations as from an increase in the number of nonresidents flying to Michigan. Nevertheless, what the statistics in Table 5-7 do tell us -- that utilization of Michigan's commercial service airports increased -- is useful information, for many businesses in the state's travel industry cater to people using such facilities.

Table 5-1. Total number of vehicles crossing the Mackinac Bridge, 1957-90 (raw counts).

Year	Total Number of Vehicles	Percent Change From Previous Year
1957[a]	140,518	---
1958	1,390,390	---
1959	1,245,887	-10.4
1960	1,179,083	-5.4
1961	1,098,828	-6.8
1962	1,143,201	+4.0
1963	1,198,566	+4.8
1964	1,251,643	+4.4
1965	1,328,641	+6.1
1966	1,418,202	+6.7
1967	1,400,292	-1.3
1968	1,506,789	+7.6
1969	1,836,383	+21.9
1970	1,947,862	+6.1
1971	2,090,492	+7.3
1970	2,174,664	+4.0
1973	2,254,439	+3.7
1974	2,138,298	-5.1
1975	2,285,784	+6.9
1976	2,391,211	+4.6
1977	2,460,293	+2.9
1978	2,539,620	+3.2
1979	2,293,446	-9.7
1980	2,260,102	-1.5
1981	2,320,542	+2.7
1982	2,295,098	-1.1
1983	2,426,807	+5.7
1984	2,503,603	+3.2
1985	2,583,499	+3.2
1986	2,752,676	+6.5
1987	3,032,547	+10.2
1988	3,229,466	+6.5
1989	3,349,506	+3.7
1990	3,390,203	+1.2

[a] Bridge opened in November 1957.

SOURCE: Mackinac Bridge Authority.

Table 5-2. Total number of vehicles crossing the Mackinac Bridge by month, 1977-90 (raw counts).

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1977	71,237	75,258	96,300	138,161	213,092	254,976	448,117	439,808	286,568	189,549	150,934	96,293	2,460,293
1978	67,806	84,467	118,371	120,750	214,174	265,015	452,126	450,884	294,439	211,438	158,346	101,804	2,539,620
1979	73,666	84,809	101,367	131,168	196,562	240,217	360,604	401,940	265,842	187,933	146,479	102,859	2,293,446
1980	76,420	87,828	93,793	125,141	186,366	226,149	376,221	421,480	232,905	193,487	143,953	96,359	2,260,102
1981	79,423	77,799	97,423	132,142	194,928	237,047	397,847	413,616	263,044	185,224	142,556	99,493	2,320,542
1982	66,213	75,974	93,118	117,434	201,100	241,098	401,033	407,328	262,393	191,227	137,769	101,221	2,295,908
1983	80,955	86,064	100,788	133,147	194,977	247,600	425,426	417,845	283,314	212,894	147,497	96,300	2,426,807
1984	81,612	93,801	104,413	142,896	195,799	270,042	415,478	440,979	279,798	208,370	159,240	111,175	2,503,603
1985	84,355	84,740	108,711	136,353	222,276	286,987	437,429	456,180	284,468	216,325	154,816	110,859	2,583,499
1986	89,510	89,054	118,498	140,290	233,380	301,358	461,466	498,508	292,578	224,963	175,685	127,386	2,752,676
1987	104,252	111,066	132,637	171,882	255,963	326,339	503,047	500,385	355,650	242,569	191,922	136,835	3,032,547
1988	112,484	121,005	140,771	181,203	272,456	353,582	546,795	505,961	375,404	268,334	203,027	148,444	3,229,466
1989	127,270	127,070	159,864	180,335	280,510	367,830	533,692	528,761	398,783	287,628	207,300	150,463	3,349,506
1990	131,714	135,388	164,031	203,515	280,863	376,812	533,869	531,816	370,772	278,501	222,311	160,611	3,390,203

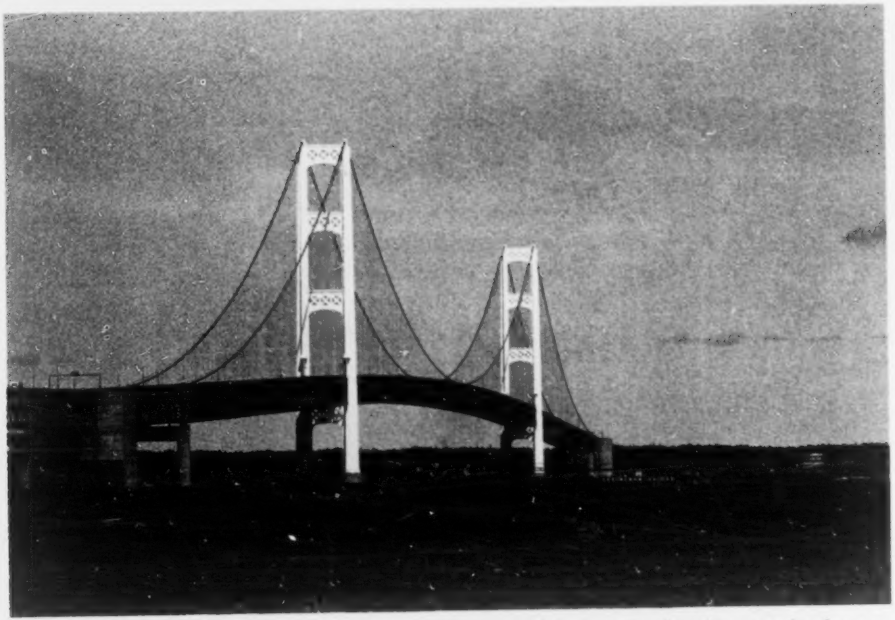
SOURCE: Mackinac Bridge Authority.

Table 5-3. Total number of vehicles crossing the Detroit-Windsor Tunnel, 1977-90 (raw counts).

Fiscal Year[1]	Revenue Vehicles	Percent Change From Previous Year
1977	4,968,398	-1.7
1978	5,392,341	+8.5
1979	5,250,899	-2.6
1980	5,875,945	+11.9
1981	6,323,911	+7.6
1982	5,397,841	-14.6
1983	5,585,446	+3.5
1984	5,738,845	+2.7
1985	5,914,294	+3.1
1986	6,037,338	+2.1
1987	6,330,380	+4.8
1988	6,351,584	+0.3
1989	6,442,181	+1.4
1990	6,898,350	+7.1

[1] November 1 through October 31.

SOURCE: Annual reports of the Detroit and Canada Tunnel Corporation.



The Mackinac Bridge, linking Michigan's Upper and Lower Peninsulas, received over 3 million vehicle crossings in 1990.

Table 5-4. Locations of permanent highway traffic recorder stations in Michigan.

Station	Vicinity	County	Specific Location
1049	Iron River	Iron	On US-2 0.3 miles east of Lake Five Rd.
1069	Carney	Menominee	On US-41 0.4 miles south of Oakwood Rd.
1089	Skandia	Marquette	On US-41 3.7 mi. se. of M-28 (0.5 mi. se. of County Road 480).
1109	Champion	Marquette	On US-41 0.1 mile west of M-95.
1149	Champion	Marquette	On US-41 0.1 mile east of M-95.
1189	Champion	Marquette	On M-95 0.1 mile south of US-41,M-28.
1309	Land O'Lakes	Gogebic	On US-45 0.1 mile north of Wisconsin state line.
1449	Powers	Menominee	On US-2/US-41 0.2 miles east of County Road 557.
1529	Norway	Dickinson	On US-2 east of Norway Road.
2029	Brevort	Mackinac	On US-2 2.4 mi. e. of Ozark Rd. in Brevort (19.5 w. of I-75).
2049	St. Ignace	Mackinac	On I-75 3.4 mi. s. of M-123 (n. of Castle Rock Road BL-75).
2089	Mackinac Bridge	Mackinac	On I-75 at toll gates at north end of bridge (St. Ignace).
2109	International Bridge	Chippewa	On I-75 at toll gates south end of bridge (Sault Ste. Marie).
2189	Raco	Chippewa	On M-28 0.6 miles east of Raco Corners.
2209	Deerton	Alger	On M-28 0.5 miles east of Whitefish Rd.
3029	Farwell	Clare	On M-115 0.3 mi. nw. of Lake Station Ave. (7.0 mi. nw. of US-10).
3069	Kalkaska	Kalkaska	On US-131 0.5 mi. s. of Twin Lake Rd. (6.0 mi. n. of M-72).
3089	Sears	Osceola	On M-66 0.1 mile south of US-10.
3109	Baldwin	Lake	On M-37 3.0 mile south of US-10 in Baldwin.
3129	Traverse City	Grand Traverse	On M-37 1.5 mile south of US-31.
3149	Sears	Osceola	On US-10 0.1 mile west of M-66.
3189	Sears	Osceola	On US-10 0.1 mile east of M-66.
3229	Sears	Osceola	On M-66 0.1 mile north of US-10.
3249	Clare	Clare	On US-10/US-27 at the travel information center.
3269	Branch	Mason	On US-10 0.5 miles west of Landon Rd.
4029	Alpena	Alpena	On US-23 0.2 mile north of 45th parallel (3.0 s. of Alpena).
4069	Sterling	Arenac	On Old M-76 0.2 mi. nw. of Klein Rd. (2.0 mi. nw. of Sterling).
4089	Rose City	Ogemaw	On M-33 0.2 mi. south of Borden Road (north of Rose City).
4109	Houghton Heights	Roscommon	On Hou-Higg. Dr. 5.4 mi. south of M-55 (south of Snow Bowl Road).
4129	Houghton Lake	Roscommon	On US-27 5.5 mi. south of M-55 (south of Snow Bowl Road).
4149	Prudenville	Roscommon	On I-75 0.1 mi. east of M-55.
4229	Au Gres	Arenac	On US-23 0.5 mi. east of Tonkey Road (east of Au Gres).
5029	St. Johns	Clinton	On US-27 0.2 mi. south of Colony Road (north of St. Johns).
5049	Dewitt	Clinton	On I-69 at the Lowell Rd. overpass.
5069	Wyoming	Kent	On US-131 0.5 miles south of 44th St.
5089	Cascade	Kent	On Cascade Rd. 0.3 mi. west of Hilton Ave. (1.2 mi. e. of Snow Ave.).
5109	Ithaca	Gratiot	On Washington Rd. 0.7 mi. west of Duffield Rd. (10.0 mi. w. of Ithaca).
5149	Morley	Mecosta	On Old US-131 0.5 mile north of 5 Mile Road.
5169	Perrinton	Gratiot	On M-57 2.5 mi. west of US-27 (0.5 mi. w. of Jerome Rd.).
5189	Lake Odessa	Ionia	On Jordan Lk. Rd. 0.2 mi. south of Clark Rd. (3.1 mi. s. of I-96).
5229	Grand Rapids	Kent	On I-96 2.0 mi. west of M-50 (at Morse Lake Ave. overpass).
5249	Morley	Mecosta	On US-131 at 4-Mile Road overpass.
5269	Pentwater	Oceana	On US-31 at Hammett Road overpass.
5289	Muskegon	Muskegon	On US-31 0.5 miles south of M-46.
6049	Port Sanilac	Sanilac	On M-25 4.7 mi. south of M-46 (0.3 mi. north of Cash Road).
6069	Lansing	Shiawassee	On I-69 6.5 mi. southwest of M-52 (at Looking Glass River).
6089	Capac	Saint Clair	On Old M-21 6.3 mi. west of M-19 (0.7 mi. west of Knoll Road).

6109	Blue Water Bridge	Saint Clair	On I-94 at toll gates west end of bridge (Port Huron).
6129	Birch Run	Saginaw	On I-75 1.9 mi. north of M-54,M-83 (at Maple Rd. overpass).
6149	Carrollton	Saginaw	On I-75 0.1 mile southeast of n. jct. I-675.
6169	Hemans	Sanilac	On M-53 0.1 mile north of M-46.
6189	Carrollton	Saginaw	On I-675 0.1 mile south of n. jct. I-675.
6209	Hemans	Sanilac	On M-46 0.1 mile east of M-53.
6229	Carrollton	Saginaw	On I-75 0.1 mile northwest of n. jct. I-675.
6249	Hemans	Sanilac	On M-53 0.1 mile south of M-46.
6269	Mount Morris	Genesee	On I-475 0.5 mi. east of n. jct. I-75 (at Jennings Road).
6289	Hemans	Sanilac	On M-46 0.1 mile west of M-53.
6389	Capac	Saint Clair	On I-69 0.7 miles east of Capac Road.
6429	Kawkawlin	Bay	On I-75 0.5 miles n.w. of Wilder Road.
6449	Swartz Creek	Genesee	On I-69 0.5 miles s.w. of Linden Road.
6469	Port Huron	Saint Clair	On I-94 1 mile s.w. of Range Road.
7029	Grass Lake	Jackson	On I-94 at the truck scales.
7069	Homer	Calhoun	On M-60 1.1 mi. west of w. jct. M-99 (0.6 mi. e. of 23-Mile Road.
7109	Schoolcraft	Kalamazoo	On US-131 0.3 mi. south of YZ Ave. (11.4 mi. south of I-94).
7129	Buchanan	Berrien	On Niles-Buch. Rd. 0.4 mi. west of Mayflower Rd. (3.2 mi. w. of US-12BR).
7149	Lawrence	Van Buren	On 54th St. 0.6 mi. south of M-43 (0.4 mi. n. of Lester Road).
7169	Marshall	Calhoun	On I-94 7.0 mi. east of I-69 (0.3 mi. w. of 22 Mile Road).
7189	New Buffalo	Berrien	On I-94 1.6 mi. north of US-12 (0.6 mi. s. of Union Pier Road).
7269	Coldwater	Branch	On I-69 at the travel information center.
7289	Lawrence	Van Buren	On M-43 0.2 mile west of 54th Street.
7309	Glenn	Allegan	On I-196 at the 114th St. overpass.
7329	White Pigeon	Saint Joseph	On US-12 0.1 mi. w. of "A" Road.
8029	Mason	Ingham	On US-127 1.7 mi. south of Kipp Road (3.8 mi. s. of M-36).
8049	Fowlerville	Livingston	On I-96 at the truck scales.
8129	Jonesville	Hillsdale	On US-12 1.2 mi east of e. jct M-99 (0.2 w. of Dobson Rd.).
8169	Erie	Monroe	On US-24 0.1 mi. north of US-24, M-125 (7.7 mi. s. of M-50).
8209	New Hudson	Oakland	On I-96 at South Hill Rd. (8.0 mi. east of US-23).
8229	Hartland	Livingston	On US-23 0.1 mile south of M-59 (8.0 mi. north of I-96).
8249	Luna Pier	Monroe	On I-75 0.5 miles south of Luna Pier Road.
8269	Luna Pier	Monroe	On I-75 0.5 miles north of Luna Pier Road.
8369	Erie	Monroe	On US-24/M-125 connector, 0.1 mile east of US-24.
8409	Troy	Oakland	On M-59 at John R overpass (1.1 mile east of M-150).
8429	Erie	Monroe	On US-24 0.1 mi. south of US-24, M-125 (7.9 mi. s. of M-50).
8469	Erie	Monroe	On Lakewood Rd. 0.1 mile west of US-24 (south of Monroe).
8509	Hartland	Livingston	On US-23 0.1 mile north of M-59 (8.0 mi. north of I-96).
8629	Clarkston	Oakland	On I-75 0.1 mile east of M-15.
8649	Clarkston	Oakland	On I-75 0.1 mile west of M-15.
8669	Clarkston	Oakland	On M-15 on M-15 overpass at I-75.
8689	Dundee	Monroe	On US-23 at the travel information center.
8709	Dundee	Monroe	On US-223 0.5 mi. west of US-23 interchange.

SOURCE: Michigan Department of Transportation, Bureau of Transportation Planning.

Table 5-5. Annual average daily traffic counts at permanent traffic recorder stations in Michigan, 1985-90.

Station	Vicinity	1985	1986	1987	1988	1989	1990
1049	Iron River	N.A.	N.A.	N.A.	1,261	1,296	1,340
1069	Carney	N.A.	N.A.	N.A.	2,007	2,071	2,071
1089	Skandia	N.A.	N.A.	N.A.	4,940	5,083	5,202
1109	Champion	3,376	3,063	N.A.	4,150	4,186	4,542
1149	Champion	4,760	5,143	5,571	4,887	5,726	5,838
1189	Champion	2,134	2,266	2,332	2,384	2,488	2,447
1309	Land O'Lakes	N.A.	N.A.	N.A.	1,418	1,681	1,675
1449	Powers	N.A.	N.A.	N.A.	N.A.	5,249	5,002
1529	Norway	N.A.	N.A.	N.A.	5,887	6,374	6,493
2029	Brevort	2,805	2,652	2,251	3,559	N.A.	3,789
2049	St. Ignace	4,693	5,069	5,323	5,366	5,993	6,065
2089	Mackinac Bridge	7,074	7,544	8,305	8,821	9,172	9,330
2109	Internat'l Bridge	4,388	5,222	6,147	7,409	7,955	9,014
2189	Raco	N.A.	N.A.	N.A.	1,716	1,622	1,659
2209	Deerton	N.A.	N.A.	N.A.	3,018	3,045	3,182
3029	Farwell	N.A.	4,188	4,645	4,911	4,857	4,855
3069	Kalkaska	N.A.	5,065	5,080	5,525	5,724	5,915
3089	Sears	1,569	1,611	1,664	1,866	1,807	1,728
3109	Baldwin	N.A.	4,480	4,938	5,026	5,222	5,244
3129	Traverse City	7,371	7,972	8,612	9,020	9,219	8,970
3149	Sears	3,348	3,374	3,461	3,622	3,914	3,803
3189	Sears	2,766	2,736	2,838	2,967	3,206	3,084
3229	Sears	1,728	1,690	1,755	1,956	1,925	1,878
3249	Clare	N.A.	14,421	14,445	16,738	19,522	18,155
3269	Branch	N.A.	N.A.	N.A.	2,998	2,766	2,980
4029	Alpena	5,257	5,539	5,797	6,353	6,244	6,310
4069	Sterling	1,429	1,398	1,489	1,416	1,366	1,400
4089	Rose City	3,282	3,521	3,354	4,107	3,984	4,244
4109	Houghton Heights	466	502	544	707	871	785
4129	Houghton Lake	6,077	6,536	6,486	6,822	7,271	7,444
4149	Prudenville	N.A.	9,231	10,605	11,497	11,850	12,508
4229	Au Gres	N.A.	6,558	6,075	6,961	6,290	6,533
5029	St. Johns	15,645	17,043	18,040	18,863	19,679	20,151
5049	Dewitt	N.A.	N.A.	N.A.	13,850	15,478	16,818
5069	Wyoming	N.A.	N.A.	N.A.	44,054	46,782	53,614
5089	Cascade	N.A.	1,702	1,828	2,210	1,797	1,829
5109	Ithaca	1,542	1,399	1,362	1,732	1,717	1,693
5149	Morley	N.A.	2,694	2,812	2,837	3,070	3,020
5169	Perrinton	N.A.	3,207	3,293	3,479	3,571	3,709
5189	Lake Odessa	1,851	1,683	1,886	N.A.	2,270	2,256
5229	Grand Rapids	N.A.	19,037	19,251	21,849	24,183	25,819
5249	Morley	7,534	8,490	7,834	11,228	11,842	12,244
5269	Pentwater	N.A.	3,775	4,228	4,581	4,895	5,406
5289	Muskegon	N.A.	N.A.	N.A.	32,892	32,012	35,448
6049	Port Sanilac	2,946	3,038	3,209	3,434	3,361	3,387
6069	Lansing	18,747	19,672	20,702	23,433	25,217	25,194

6089	Capac	N.A.	1,328	1,417	1,422	1,562	1,570
6109	Blue Water Bridge	9,109	9,870	10,749	11,621	12,639	15,101
6129	Birch Run	33,153	36,668	40,328	40,539	41,742	43,568
6149	Carrollton	30,352	31,930	31,021	34,708	36,033	36,597
6169	Hemans	N.A.	3,146	3,425	N.A.	3,071	3,870
6189	Carrollton	10,017	10,853	11,064	17,592	12,999	[illegible]
6209	Hemans	N.A.	2,384	2,552	2,692	2,604	[illegible]
6229	Carrollton	39,856	42,231	40,041	N.A.	45,624	47,718
6249	Hemans	3,902	4,261	4,487	N.A.	4,451	4,679
6269	Mount Morris	N.A.	16,921	17,946	20,263	18,850	19,587
6289	Hemans	2,119	2,215	7,250	2,614	2,397	2,503
6389	Capac	N.A.	N.A.	7,250	8,408	9,044	9,549
6429	Kawkawlin	N.A.	N.A.	N.A.	24,707	25,470	26,720
6449	Swartz Creek	N.A.	N.A.	N.A.	30,789	31,336	31,794
6469	Port Huron	N.A.	N.A.	N.A.	14,971	15,609	16,826
7029	Grass Lake	N.A.	28,868	30,445	31,766	32,954	34,463
7069	Homer	N.A.	4,672	4,517	4,614	4,444	4,438
7109	Schoolcraft	N.A.	12,490	13,910	14,293	14,819	15,039
7129	Buchanan	2,843	N.A.	N.A.	N.A.	7,232	7,564
7149	Lawrence	N.A.	513	422	N.A.	592	653
7169	Marshall	18,871	19,802	21,825	25,265	26,652	27,397
7189	New Buffalo	N.A.	20,269	21,679	24,705	26,634	28,343
7269	Coldwater	N.A.	10,628	12,260	11,204	13,219	13,648
7289	Lawrence	N.A.	6,501	6,824	6,657	6,174	6,692
7309	Glenn	N.A.	10,585	11,253	12,106	12,703	13,338
7329	White Pigeon	N.A.	N.A.	N.A.	5,912	5,819	5,705
8029	Mason	11,827	12,951	13,074	N.A.	N.A.	15,000
8049	Fowlerville	N.A.	28,730	30,408	32,423	33,649	35,127
8129	Jonesville	4,980	5,209	5,243	5,781	6,180	6,146
8169	Erie	N.A.	7,035	N.A.	N.A.	N.A.	8,053
8209	New Hudson	59,090	64,081	61,540	73,840	75,582	81,028
8229	Hartland	25,955	27,966	29,813	33,945	35,714	32,833
8249	Luna Pier	N.A.	N.A.	N.A.	N.A.	37,406	40,785
8269	Luna Pier	N.A.	N.A.	N.A.	N.A.	35,701	40,733
8369	Erie	N.A.	N.A.	N.A.	N.A.	N.A.	3,948
8409	Troy	44,319	49,553	53,929	56,964	58,248	55,947
8429	Erie	N.A.	6,743	7,749	8,705	8,221	7,459
8469	Erie	N.A.	2,920	3,085	3,058	N.A.	3,111
8509	Hartland	25,113	26,220	26,766	32,784	34,293	31,593
8629	Clarkston	N.A.	40,338	39,901	40,412	N.A.	44,320
8649	Clarkston	N.A.	32,948	31,930	36,526	N.A.	35,446
8669	Clarkston	N.A.	17,079	16,962	18,464	18,076	18,711
8689	Dundee	N.A.	17,118	19,409	20,959	22,017	22,074
8709	Dundee	N.A.	6,106	5,510	N.A.	7,051	7,192

NOTE: These counts include traffic from both directions.

Average daily traffic count$_i$ = [(average weekday$_i$ x 5) + average Saturday$_i$ + average Sunday$_i$]/7
where i = year

SOURCE: Michigan Department of Transportation, Bureau of Transportation Planning.

Table 5-6. Average daily traffic counts at permanent traffic recorder stations in Michigan by month, 1990.

Station	Vicinity	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1049	Iron River	907	955	971	1,059	1,369	1,677	2,144	1,987	1,555	1,338	1,238	882	1,340
1069	Carney	1,740	1,789	1,968	2,048	2,166	2,279	2,485	2,382	2,154	2,086	2,097	1,744	2,071
1089	Skandia	4,325	4,635	4,722	5,078	5,289	5,685	5,911	5,959	5,765	5,353	5,035	4,532	5,202
1109	Champion	2,796	3,059	3,264	N.A.	N.A.	5,343	6,808	6,538	5,227	4,877	4,010	3,150	4,542
1149	Champion	4,148	4,421	4,657	5,034	5,924	6,821	8,464	8,071	6,658	6,392	5,544	4,544	5,838
1189	Champion	1,978	2,117	2,153	2,252	2,477	2,686	3,179	N.A.	2,707	2,645	2,410	N.A.	2,447
1309	Land O'Lakes	1,290	1,342	1,270	1,336	1,758	1,942	2,494	2,432	2,014	1,606	1,350	1,221	1,675
1449	Powers	3,996	4,088	4,375	4,781	5,156	5,528	6,095	6,376	5,435	5,170	4,902	4,007	5,002
1529	Norway	5,379	5,535	5,980	6,514	7,127	7,670	8,371	N.A.	N.A.	6,809	6,327	5,414	6,493
2029	Brevort	1,679	1,834	2,025	2,923	3,724	4,839	6,867	6,862	4,829	3,910	3,707	2,232	3,789
2049	St. Ignace	3,315	3,743	3,987	4,529	6,051	7,809	10,452	10,522	7,804	6,215	4,771	3,794	6,065
2089	Mackinac Bridge	4,265	4,834	5,306	6,744	9,119	12,427	17,201	17,279	12,550	9,068	7,453	5,195	9,330
2109	International Bridge	6,798	7,291	7,628	7,892	8,991	9,995	11,522	11,460	10,145	9,416	8,572	8,241	9,014
2189	Raco	1,060	1,189	1,217	1,238	1,574	1,996	2,781	2,717	2,098	1,623	1,260	1,058	1,659
2209	Deerton	1,876	1,961	2,185	2,697	3,178	3,755	5,068	5,028	3,862	3,224	2,965	2,275	3,182
3029	Farwell	3,296	3,379	3,548	4,093	5,059	5,542	7,031	7,078	5,510	5,278	4,925	3,523	4,855
3069	Kalkaska	4,331	4,687	4,745	5,147	6,287	6,898	7,853	7,829	6,577	6,340	5,370	4,676	5,915
3089	Sears	1,245	1,283	1,371	1,637	2,043	2,057	2,415	2,181	1,915	1,799	1,615	1,259	1,728
3109	Baldwin	3,242	3,447	3,901	4,968	6,224	6,355	7,464	6,901	6,525	N.A.	5,749	3,658	5,244
3129	Traverse City	7,171	7,588	8,144	8,912	9,752	10,289	11,613	N.A.	N.A.	9,772	8,621	7,924	8,970
3149	Sears	2,808	2,976	3,201	3,540	4,042	4,259	4,912	4,853	4,268	4,012	3,984	2,940	3,803
3189	Sears	2,069	2,161	2,414	2,815	3,319	3,508	4,199	4,152	3,557	3,328	3,348	2,275	3,084
3229	Sears	1,290	1,384	1,509	1,759	2,204	2,224	2,544	2,395	2,136	1,998	1,822	1,376	1,878
3249	Clare	12,443	12,907	13,194	15,533	19,670	20,869	26,706	25,790	20,636	18,998	18,069	13,337	18,155
3269	Branch	N.A.	1,908	2,202	2,621	3,121	3,270	4,094	4,005	3,365	3,160	2,867	1,969	2,980
4029	Alpena	4,976	5,126	5,640	6,021	6,523	7,007	7,661	7,588	7,121	6,503	6,003	5,553	6,310
4069	Sterling	924	920	1,108	1,287	1,562	1,579	1,902	1,763	1,605	1,581	1,523	1,035	1,400
4089	Rose City	2,442	2,563	2,668	3,449	4,595	4,861	5,922	5,809	4,883	5,075	5,347	2,694	4,244
4109	Houghton Heights	520	N.A.	N.A.	564	1,008	N.A.	N.A.	1,390	1,197	768	646	399	785
4129	Houghton Lake	5,332	5,113	5,057	5,729	8,176	9,218	11,941	11,938	8,553	8,043	6,636	4,850	7,444
4149	Prudenville	8,675	8,647	8,031	8,969	12,020	14,733	21,055	20,482	14,155	13,063	11,245	8,799	12,508
4229	Au Gres	4,224	4,339	4,902	6,753	6,904	7,651	9,728	9,262	7,376	6,556	5,583	4,633	6,533
5029	St. Johns	15,672	15,986	17,359	19,301	21,539	22,750	24,147	24,996	22,300	21,745	19,612	16,239	20,151
5049	Dewitt	13,166	13,478	15,298	16,540	17,629	19,336	19,727	20,218	17,969	17,333	16,952	15,309	16,818
5069	Wyoming	N.A.	N.A.	N.A.	50,096	51,685	54,519	52,721	53,668	51,626	56,746	58,651	52,256	53,614
5089	Cascade	1,538	1,500	1,698	1,743	N.A.	N.A.	N.A.	2,289	1,975	2,039	1,947	1,680	1,829
5109	Ithaca	1,415	1,427	1,511	1,570	1,739	1,888	1,992	1,949	1,884	1,854	1,710	1,469	1,693
5149	Morley	2,492	2,603	2,814	3,074	3,310	3,167	3,025	3,069	3,286	3,281	N.A.	N.A.	3,020
5169	Perrinton	2,983	3,109	3,368	3,761	4,091	4,242	4,216	4,268	3,891	3,696	3,542	3,224	3,709
5189	Lake Odessa	1,939	1,892	2,141	2,238	2,555	2,564	2,597	2,447	2,351	2,262	2,176	1,995	2,256
5229	Grand Rapids	20,923	21,668	24,241	25,395	26,836	28,390	29,052	30,771	27,708	26,523	26,121	22,536	25,819
5249	Morley	8,965	9,162	9,602	10,845	13,275	13,112	16,160	16,091	14,272	13,452	12,829	9,685	12,244
5269	Pentwater	3,304	3,439	3,755	4,275	5,404	6,189	8,180	8,079	6,192	5,682	4,771	N.A.	5,406
5289	Muskegon	29,022	29,587	32,036	33,658	36,695	39,140	42,521	42,646	37,249	35,915	33,520	30,159	35,448
6049	Port Sanilac	2,123	2,144	2,510	3,097	3,779	3,943	5,073	4,718	4,033	3,643	3,010	2,431	3,387
6069	Lansing	22,474	22,855	N.A.	N.A.	26,275	27,806	26,937	27,963	27,022	N.A.	25,033	21,687	25,194

6089	Capac	N.A.	1,303	N.A.	N.A.	N.A.	1,743	1,657	1,658	1,613	1,626	1,490	1,355	1,570
6109	Blue Water Bridge	11,382	11,439	12,799	13,706	15,007	16,271	18,463	19,241	16,230	16,064	16,116	14,206	15,101
6129	Birch Run	32,233	33,415	35,020	39,584	44,081	48,916	58,424	57,322	N.A.	N.A.	N.A.	N.A.	43,568
6149	Carrollton	25,848	26,305	27,290	30,643	36,525	40,396	50,167	48,866	42,210	35,664	N.A.	N.A.	36,597
6169	Hemans	2,631	2,624	2,992	N.A.	N.A.	4,559	5,494	5,284	4,360	3,975	3,775	2,944	3,870
6189	Carrollton	11,859	11,635	12,921	12,534	12,867	13,302	13,148	13,649	12,421	12,211	12,530	13,308	12,747
6209	Hemans	2,128	2,239	2,447	2,679	2,821	2,830	3,033	3,147	2,862	2,918	2,660	2,291	2,672
6229	Carrollton	36,232	36,619	38,625	41,579	47,774	52,066	61,753	60,841	52,972	46,232	N.A.	N.A.	47,718
6249	Hemans	3,312	3,340	3,685	4,009	4,865	5,283	5,867	5,949	5,263	5,245	N.A.	N.A.	4,679
6269	Mount Morris	16,545	17,308	18,567	19,097	N.A.	20,889	20,932	22,017	20,852	20,760	20,137	17,986	19,587
6289	Hemans	1,755	1,813	1,988	2,147	2,521	2,814	3,108	3,164	2,863	2,930	N.A.	N.A.	2,503
6389	Capac	6,895	7,036	8,147	9,003	9,891	10,963	12,152	12,871	10,688	10,084	9,289	7,743	9,549
6429	Kawkawlin	17,950	17,918	18,683	22,078	27,187	31,033	39,158	38,403	29,825	29,068	27,799	20,109	26,720
6449	Swartz Creek	27,499	28,544	31,350	32,073	33,172	34,782	32,853	33,989	33,182	33,435	32,066	28,778	31,794
6469	Port Huron	13,232	13,569	15,095	16,103	17,290	18,416	20,357	20,718	18,406	17,371	16,350	14,547	16,826
7029	Grass Lake	26,814	27,431	N.A.	33,431	35,475	38,369	38,911	40,525	36,998	35,163	35,361	30,124	34,463
7069	Homer	3,598	3,667	4,137	4,423	4,891	5,051	4,996	4,954	4,810	4,556	4,447	3,743	4,438
7109	Schoolcraft	12,740	13,028	14,352	14,889	15,992	16,003	16,996	17,302	16,002	15,430	14,660	13,615	15,039
7129	Buchanan	6,662	6,798	7,420	7,759	8,035	8,287	8,060	8,061	7,652	7,582	7,259	7,103	7,564
7149	Lawrence	431	406	524	600	692	743	839	839	838	732	606	523	653
7169	Marshall	21,425	22,300	25,482	27,125	28,533	31,218	30,881	32,688	30,081	28,688	27,569	23,368	27,397
7189	New Buffalo	17,471	N.A.	N.A.	N.A.	N.A.	33,784	35,922	37,853	29,785	26,805	25,524	21,356	28,343
7269	Coldwater	10,052	10,501	12,595	13,708	14,447	16,760	16,045	17,152	14,404	13,390	13,102	11,667	13,648
7289	Lawrence	5,097	4,987	5,872	6,570	7,057	7,701	8,660	8,264	7,467	6,654	5,941	5,590	6,692
7309	Glenn	9,219	9,251	10,756	12,028	14,130	15,436	17,873	18,544	14,678	13,746	12,665	10,524	13,338
7329	White Pigeon	4,962	5,104	5,494	5,851	6,128	6,684	6,559	6,504	6,012	5,595	5,257	4,961	5,705
8029	Mason	14,019	14,981	N.A.	15,929	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	15,879	14,213	15,000
8049	Fowlerville	29,859	30,055	33,946	34,964	37,164	38,077	37,204	38,784	37,662	37,265	36,498	30,174	35,127
8129	Jonesville	5,146	5,277	5,814	6,057	6,902	6,664	6,497	7,025	6,402	6,455	6,132	5,336	6,146
8169	Erie	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	8,508	8,422	8,239	7,734	7,578	8,053
8209	New Hudson	69,717	69,697	76,445	78,595	84,756	90,261	89,779	91,786	84,330	84,113	80,506	73,569	81,028
8229	Hartland	28,879	29,336	32,572	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	38,909	36,495	31,252	32,833
8249	Luna Pier	32,756	34,510	39,588	42,402	42,026	44,587	47,797	48,319	39,081	38,246	39,085	35,542	40,785
8269	Luna Pier	31,224	33,006	37,972	40,637	40,155	44,118	47,132	47,630	38,411	N.A.	N.A.	N.A.	40,733
8369	Erie	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	4,182	4,213	4,149	3,812	3,500	3,948
8409	Troy	51,219	50,982	54,889	54,877	56,851	60,922	57,345	59,806	58,237	57,025	56,209	52,468	55,947
8429	Erie	7,005	6,931	7,630	N.A.	N.A.	N.A.	N.A.	7,952	7,899	7,790	7,333	7,220	7,459
8469	Erie	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	3,341	3,330	3,219	2,970	2,816	3,111
8509	Hartland	27,728	28,194	31,175	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	37,557	35,275	30,060	31,593
8629	Clarkston	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	44,319	44,320
8649	Clarkston	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	35,445	35,446
8669	Clarkston	N.A.	N.A.	18,710	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	18,711
8689	Dundee	16,507	17,031	19,275	22,103	22,857	25,944	27,094	28,490	22,689	21,796	21,195	18,605	22,074
8709	Dundee	5,975	6,063	6,637	7,074	7,431	8,087	8,093	8,246	7,539	7,314	7,087	6,700	7,192

NOTE: These counts include traffic from both directions.

Average daily traffic count_i = [(average weekday_i x 5) + average Saturday_i + average Sunday_i]/7
where i = month

SOURCE: Michigan Department of Transportation, Bureau of Transportation Planning.

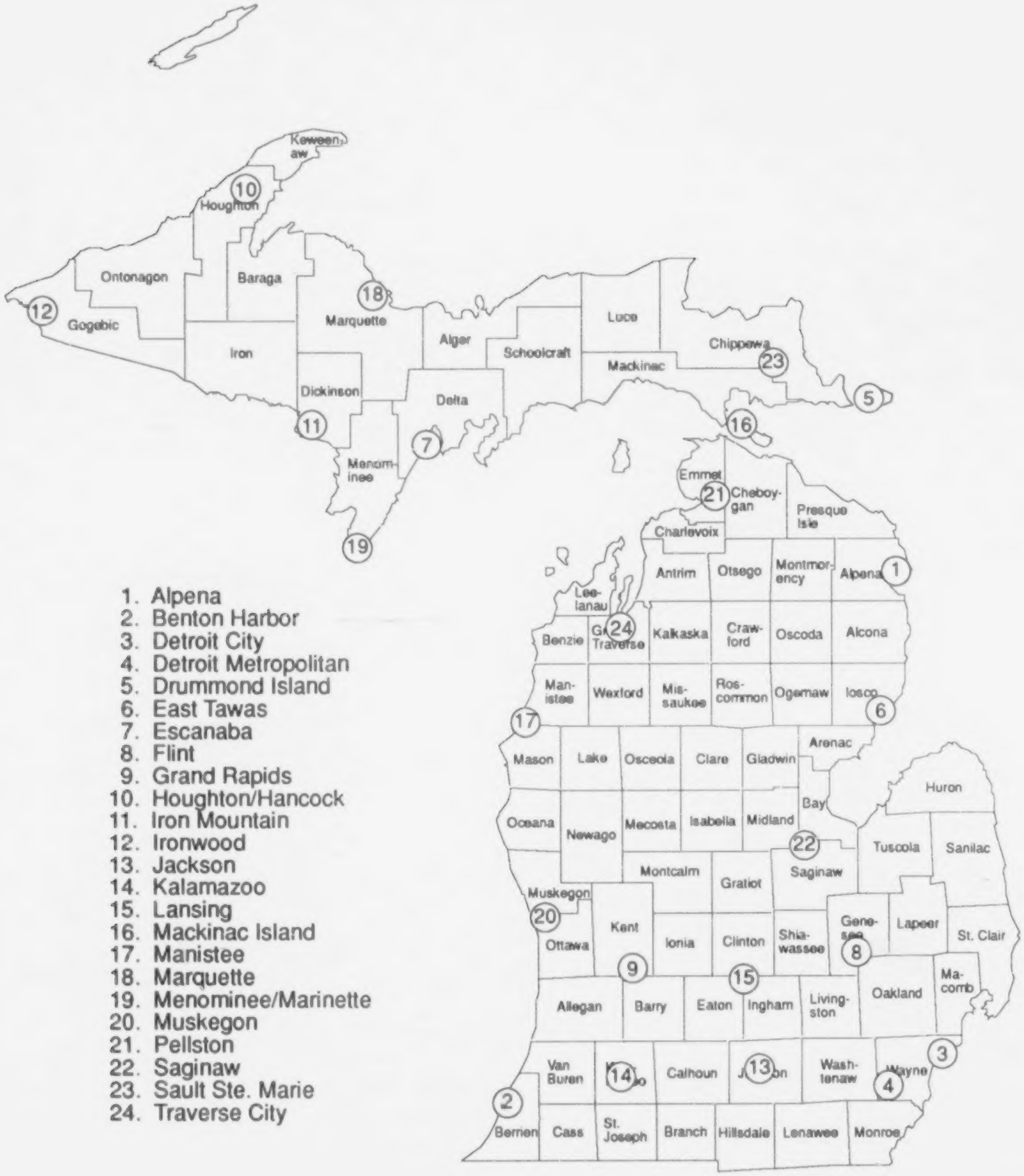

1. Alpena
2. Benton Harbor
3. Detroit City
4. Detroit Metropolitan
5. Drummond Island
6. East Tawas
7. Escanaba
8. Flint
9. Grand Rapids
10. Houghton/Hancock
11. Iron Mountain
12. Ironwood
13. Jackson
14. Kalamazoo
15. Lansing
16. Mackinac Island
17. Manistee
18. Marquette
19. Menominee/Marinette
20. Muskegon
21. Pellston
22. Saginaw
23. Sault Ste. Marie
24. Traverse City
Keweenaw
Houghton
Ontonagon
Baraga
Gogebic
Marquette
Iron
Alger
Schoolcraft
Luce
Chippewa
Mackinac
Dickinson
Delta
Menominee
Emmet
Cheboygan
Presque Isle
Charlevoix
Antrim
Otsego
Montmorency
Alpena
Leelanau
Benzie
Grand Traverse
Kalkaska
Crawford
Oscoda
Alcona
Manistee
Wexford
Missaukee
Roscommon
Ogemaw
Iosco
Arenac
Mason
Lake
Osceola
Clare
Gladwin
Huron
Bay
Oceana
Newago
Mecosta
Isabella
Midland
Tuscola
Sanilac
Montcalm
Gratiot
Saginaw
Muskegon
Kent
Ottawa
Ionia
Clinton
Shiawassee
Genesee
Lapeer
St. Clair
Allegan
Barry
Eaton
Ingham
Livingston
Oakland
Macomb
Van Buren
Kalamazoo
Calhoun
Jackson
Washtenaw
Wayne
Berrien
Cass
St. Joseph
Branch
Hillsdale
Lenawee
Monroe

Figure 5-1. Airports with scheduled air passenger service in Michigan, 1989.

SOURCE: Michigan Department of Transportation.

Table 5-7. Total number of passengers at Michigan airports with scheduled air carrier service, 1985-90.

Airport	1985	1986	1987	1988	1989	1990
Alpena	9,993	10,048	9,442	8,697	9,596	14,024
Battle Creek	33,367	17,842	9,658	0	0	0
Benton Harbor	22,791	15,538	7,808	6,548	6,204	372
Cadillac	0	0	0	395	0	0
Detroit City	45,658	39,414	32,447	282,486	719,496	781,705
Detroit Metro	15,103,539	17,071,730	19,095,309	19,144,249	20,436,430	21,338,594
Drummond Island	0	0	0	991	5,562	3,024
East Tawas	0	0	26	527	106	0
Escanaba	21,442	15,561	11,981	13,307	23,070	26,094
Flint	267,479	259,925	222,943	261,612	305,709	314,568
Gaylord	0	0	0	0	0	494
Grand Rapids	1,195,241	1,243,629	1,338,966	1,314,846	1,401,035	1,386,501
Houghton/Hancock	41,615	32,700	29,728	31,285	37,294	45,568
Iron Mountain	17,396	11,071	8,716	10,232	18,187	21,216
Ironwood	5,889	7,536	5,365	4,634	5,111	10,155
Jackson	2,050	1,178	917	746	491	26
Kalamazoo	340,893	396,810	414,662	447,878	478,540	492,880
Lansing	343,999	382,263	359,048	440,301	501,809	528,719
Mackinac Island	1,302	659	524	1,040	411	1,617
Manistee	169	1,344	2,733	3,854	5,926	4,321
Marquette	75,210	69,932	63,478	80,530	80,074	78,116
Menominee/Marinette	2,118	1,308	2,280	3,632	4,251	3,224
Muskegon	86,782	95,672	77,510	74,058	87,029	104,156
Pellston	30,421	34,345	36,444	36,084	38,394	46,664
Saginaw	380,720	405,381	436,074	460,037	504,487	467,993
Sault Ste. Marie	10,077	10,193	9,145	10,424	11,916	17,354
Traverse City	149,998	164,747	151,515	160,572	185,116	229,361
Total	18,188,149	20,288,826	22,326,719	22,798,965	24,866,244	25,916,746

NOTE: Battle Creek terminated service in September 1987; Cadillac inititated service in February 1988 and terminated service in May 1988; Drummond Island initiated service in September 1988; Gaylord inititated service in May 1990; East Tawas initiated service in December 1987 and terminated service in February 1989.

SOURCE: Michigan Department of Transportation, Bureau of Transportation Planning, Aviation Planning Unit.

Table 5-8. Total number of passengers at Michigan airports with scheduled air carrier service, by month, 1990.

AIRPORT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Alpena	907	988	1,363	994	1,265	1,366	1,246	1,531	1,029	1,211	1,131	993	14,024
Benton Harbor	326	46	0	0	0	0	0	0	0	0	0	0	372
Detroit City	48,360	56,116	61,031	59,626	63,068	71,805	75,312	84,268	67,620	68,328	69,357	56,814	781,705
Detroit Metro	1,583,421	1,550,828	1,908,209	1,788,997	1,819,512	1,921,242	1,936,417	2,132,381	1,634,733	1,836,385	1,641,809	1,584,660	21,338,594
Drummond Island	416	479	280	330	367	335	244	349	123	101	0	0	3,024
Escanaba	2,129	2,045	2,196	2,170	2,019	2,365	2,366	2,534	2,100	2,282	2,010	1,878	26,094
Flint	24,351	21,365	26,919	28,403	25,497	27,086	27,478	29,660	24,094	25,862	26,554	27,299	314,568
Gaylord	0	0	0	0	57	51	153	140	77	16	0	0	494
Grand Rapids	107,199	110,515	137,365	119,258	111,777	120,416	119,262	129,917	103,210	116,726	104,313	106,543	1,386,501
Houghton/Hancock	3,274	3,294	3,232	3,639	3,310	3,240	5,303	5,847	3,593	4,097	3,345	3,394	45,568
Iron Mountain	1,782	1,691	1,807	1,838	1,825	1,924	2,016	2,001	1,634	1,619	1,475	1,604	21,216
Ironwood	652	571	601	595	583	645	1,813	1,771	790	731	642	761	10,155
Jackson	9	12	5	0	0	0	0	0	0	0	0	0	26
Kalamazoo	36,906	34,818	44,938	39,990	43,433	42,874	42,720	46,406	37,778	43,196	40,619	39,202	492,880
Lansing	39,727	38,206	49,240	45,387	44,287	45,208	43,407	48,296	41,598	44,412	44,060	44,891	528,719
Mackinac Island	0	0	0	0	48	317	501	415	291	45	0	0	1,617
Manistee	348	325	401	412	374	400	546	520	241	279	246	229	4,321
Marquette	5,582	5,615	6,377	5,940	5,694	7,011	8,411	8,154	6,380	6,376	6,094	6,482	78,116
Menominee/Marinette	317	365	349	323	311	305	227	305	210	206	169	137	3,224
Muskegon	6,849	7,318	9,211	8,652	8,119	8,989	10,418	11,635	8,286	8,868	7,655	8,156	104,156
Pellston	2,224	2,098	2,683	2,321	3,051	5,398	8,709	9,379	3,908	2,977	1,980	1,936	46,664
Saginaw	37,197	34,777	41,765	39,478	39,228	39,017	40,666	43,750	37,136	42,090	36,551	36,338	467,993
Sault Ste. Marie	1,189	1,283	1,819	1,495	1,401	1,381	1,789	1,784	1,456	1,290	1,107	1,360	17,354
Traverse City	12,432	12,815	16,225	15,199	16,123	23,916	31,516	33,690	22,121	17,795	13,380	14,149	229,361
Total	1,915,597	1,885,570	2,316,016	2,165,047	2,191,349	2,325,291	2,360,520	2,594,733	1,998,408	2,224,892	2,002,497	1,936,826	25,916,746

NOTE: Figures are sums of enplaned passengers and deplaned passengers.

SOURCE: Michigan Department of Transportation, Bureau of Transportation Planning, Aviation Planning Unit.

CHAPTER 6

INTERNATIONAL TRAVEL TO MICHIGAN

Daniel M. Spotts

Introduction

According to the U.S. Travel and Tourism Administration (USTTA), international travel to the United States is America's largest "export." In 1990, 40 million foreigners visited the U.S. and spent an estimated $52.8 billion, directly supporting over 700,000 American jobs and generating $6 billion in federal, state, and local tax revenue. Foreign visitor arrivals in the U.S. and their expenditures have steadily increased since 1986 at an average annual rate of over 10% and are projected to further increase in 1991. Moreover, foreign visitors to the U.S. spend an estimated $1,500 per capita, compared to $250 among domestic travelers.

Since foreign travelers represent an increasingly significant and lucrative opportunity for travel marketers in Michigan to exploit, it is important to know something of the nature of this segment of the state's travel market. To provide at least a basic overview of the subject, this chapter presents descriptive information on the numbers and origins of foreigners visiting Michigan, the characteristics of Canadian overnight travel to and through Michigan, and trends in these variables between 1985 and 1989.

Overseas Travel to Michigan

USTTA reports entitled *Summary and Analysis of International Travel to the United States* are a useful source of statistics on the number of overseas and Mexican travelers which cited a given state as their "first intended address" in the U.S. on a government form which visitors to the U.S. must complete. The statistics cover travelers who held a B-1 (business) visa, a B-2 (pleasure) visa, an F-1 (student) visa, or an F-2 (family members of students) visa. Transiting visitors and official diplomats are excluded. While the statistics contained in these USTTA reports and discussed in this chapter are useful, it is important to keep in mind that they pertain to all types of travelers and not just pleasure travelers.

An analysis of statistics from the above source reveals that overseas travel to the United States is highly concentrated (Table 6-1). Nearly three-quarters (74%) of the overseas travelers entering the U.S. in 1989 stated that they were destined for one of only four states: Florida, California, New York, or Hawaii. During that year 117,064 or only 1% of the overseas travelers entering the U.S. stated that they intended to visit Michigan. More than twice as many overseas travelers (265,097) stated Illinois as their destination, fewer stated Ohio (103,515), and even fewer stated Minnesota (56,158), Wisconsin (43,607), or Indiana (40,201). Among the various states and the District of Columbia, Michigan ranked 12th in number of overseas travelers intending to visit it.

The majority (57%) of the overseas travelers destined for Michigan in 1989 were from Western Europe (Table 6-2), perhaps reflecting Michigan's significant European ethnic population. An additional 24% were from Asia, 6% were from the Middle East, and less than 5% were from Eastern Europe, Oceania, South America, Central America, the Caribbean, or Africa. The top five countries from which overseas travelers destined for Michigan in 1989 originated were the United Kingdom, Germany, Japan, France, and the Netherlands (Table 6-2).

Table 6-1. Overseas traveler arrivals by state, 1989.

Rank	State of Destination	No. Overseas Traveler Arrivals	Percent	Cumulative Percent
1	Florida	2,853,420	24.3	24.3
2	California	2,145,985	18.3	42.6
3	New York	2,062,377	17.5	60.1
4	Hawaii	1,587,191	13.5	73.6
5	Texas	295,571	2.5	76.1
6	Massachusetts	272,049	2.3	78.4
7	New Jersey	271,233	2.3	80.7
8	Illinois	265,097	2.3	83.0
9	Washington, D.C.	155,051	1.3	84.3
10	Pennsylvania	148,639	1.3	85.6
11	Washington	133,780	1.1	86.7
12	■ Michigan	117,064	1.0	87.7
13	Georgia	114,902	1.0	88.7
14	Ohio	103,515	0.9	89.6
15	Virginia	101,073	0.9	90.5
16	Connecticut	99,536	0.9	91.4
17	Maryland	96,505	0.8	92.2
18	Louisiana	82,471	0.7	92.9
19	Colorado	81,130	0.7	93.6
20	Nevada	75,003	0.6	94.2
21	Arizona	69,422	0.6	94.8
22	Minnesota	56,158	0.5	95.3
23	North Carolina	55,676	0.5	95.8
24	Oregon	46,194	0.4	96.2
25	Wisconsin	43,607	0.4	96.6
26	Indiana	40,201	0.3	96.9
27	Tennessee	35,122	0.3	97.2
28	Missouri	34,227	0.3	97.5
29	South Carolina	29,384	0.2	97.7
30	Alaska	24,785	0.2	97.9
31	Utah	23,313	0.2	98.1
32	Alabama	21,255	0.2	98.3
33	New Hampshire	19,633	0.2	98.5
34	Rhode Island	19,302	0.2	98.7
35	Kentucky	19,140	0.2	98.9
36	Oklahoma	18,986	0.2	99.1
37	Iowa	17,072	0.1	99.2
38	Maine	16,438	0.1	99.3
39	Kansas	16,249	0.1	99.4
40	Vermont	15,891	0.1	99.5
41	Delaware	13,504	0.1	99.6
42	New Mexico	12,143	0.1	99.7
43	Nebraska	7,035	0.1	99.8
44	Mississippi	6,756	0.1	99.9
45	Arkansas	6,631	0.1	100.0
46	West Virginia	5,788	0.0	100.0
47	Montana	5,415	0.0	100.0
48	Idaho	5,369	0.0	100.0
49	North Dakota	4,329	0.0	100.0
50	Wyoming	3,478	0.0	100.0
51	South Dakota	3,175	0.0	100.0
	Total	11,757,270	100.0	
	Guam	507,722		
	Virgin Islands	15,042		
	Puerto Rico	131,398		
	Not Reported	1,587,271		
	Grand Total	13,998,703		

NOTE: "Traveler" means a holder of a B-1 (business) visa, a B-2 (pleasure) visa, an F-1 (student) visa, or an F-2 (family members of students) visa. "Destination" means first intended address in U.S.

SOURCE: U.S. Travel and Tourism Administration. n.d. Summary and Analysis of International Travel to the United States: December 1989 and Year To Date. Washington, D.C.: U.S. Travel and Tourism Administration.

Table 6-2. Number of foreign traveler arrivals in Michigan, by origin, 1985-89.

ORIGIN	1985	1986	1987	1988	1989	Percent of 1989 Overseas Arrivals	Avg. Annual Change, 1985-89 (Percent)
OVERSEAS AREAS							
Eastern Europe	2,059	2,577	3,394	4,276	4,489	3.8	21.5
Asia	13,012	15,787	19,610	25,388	27,699	23.7	20.8
Western Europe	49,219	54,620	61,178	65,757	66,554	56.8	7.8
Oceania	2,403	2,166	2,289	2,653	3,090	2.6	6.5
South America	3,428	3,765	3,586	4,157	4,304	3.7	5.9
Middle East	6,175	5,977	5,891	7,119	6,686	5.7	2.0
Caribbean	1,795	1,606	2,027	1,892	1,819	1.6	0.3
Africa	1,739	1,857	1,601	1,734	1,718	1.5	-0.3
Central America	725	641	740	788	705	0.6	-0.7
Total	80,555	88,996	100,316	113,764	117,064	100.0	9.8
OVERSEAS COUNTRIES							
Japan	6,291	8,068	11,094	14,410	15,193	13.0	24.7
United Kingdom	15,457	17,594	19,192	20,795	21,928	18.7	9.1
Brazil	1,437	1,669	1,518	1,881	2,017	1.7	8.8
Netherlands	3,299	3,821	4,280	4,543	4,626	3.9	8.8
Sweden	1,586	1,514	1,915	2,234	2,191	1.9	8.4
Germany	11,910	13,455	15,297	16,654	15,787	13.5	7.3
France	4,456	4,676	5,034	5,450	5,826	5.0	6.9
Australia	2,056	1,790	1,863	2,136	2,551	2.2	5.5
Italy	3,139	3,402	3,782	3,930	3,841	3.3	5.2
Switzerland	1,425	1,429	1,644	1,744	1,711	1.5	4.7
Venezuela	696	536	574	752	776	0.7	2.8
Columbia	396	393	373	425	396	0.3	0.0
Other	28,407	30,649	33,750	38,810	40,221	34.3	9.1
Total	80,555	88,996	100,316	113,764	117,064	100.0	9.8
MEXICO	6,169	5,858	6,460	7,384	9,632	---	11.8

NOTE: "Traveler" means a holder of a B-1 (business) visa, a B-2 (pleasure) visa, an F-1 (student) visa, or an F-2 (family members of students) visa. Michigan was first intended address in U.S.

SOURCE: U.S. Travel and Tourism Administration. Summary and Analysis of International Travel to the United States, quarterly. Washington, D.C.: U.S. Travel and Tourism Administration.

The total number of overseas travelers destined for Michigan increased steadily between 1985 and 1989 at an average annual rate of 9.8% (Table 6-2). Traveler arrivals from Eastern Europe and Asia, particularly Japan, increased at the highest annual rates during this period, growing at more than twice the rate for all overseas travelers combined.

Mexican and Canadian Travel to Michigan

The "pleasant peninsulas" are of course visited by many Mexicans and Canadians as well as overseas travelers. Mexican traveler arrivals in Michigan between 1985 and 1989 increased at an average annual rate of 11.8%, and the more than 9,000 Mexicans that visited Michigan in 1989 exceeded the number of travelers from many European nations (Table 6-2).

According to information supplied to the USTTA by Statistics Canada, in 1989 the volume of Canadian overnight travel to and through Michigan totaled 1.3 million person-visits and 3.2 million person-nights (Table 6-3). Expenditures in Michigan on these trips totaled about $117 million (U.S.). This is equivalent to about $88 (U.S.) per person per trip, or $36 (U.S.) per person per day. The average length of stay in Michigan on these trips was 2.4 nights.

Ninety percent of the Canadian overnight person-visits in 1989 were by automobile (Table 6-4). Over half (55%) involved the renting of a hotel or motel room, and 30% involved lodging in a friend's or relative's home. Forty-two percent of the person-visits were for the purpose of pleasure (other than visiting friends or relatives), 37% were for the purpose of visiting friends or relatives, and only 9% were for the purpose of business or attending a convention. A plurality (44%) of the person-visits occurred during the third quarter. Nearly all (93%) person-visits originated in Ontario.

Between 1985 and 1989 the number of Canadian overnight person-visits to and through Michigan increased at an average annual rate of 10.9% (Table 6-3), exceeding the 9.8% average annual growth in overseas traveler arrivals. During the same period the characteristics of these person-visits were generally unchanged, although a few important trends are apparent (Table 6-4). The percentage of person-visits for the purpose of pleasure generally increased, while the percentage of person-visits for the purpose of visiting relatives or friends generally declined. Similarly, the percentage of person-visits involving the use of a hotel or motel generally increased, while the percentage involving lodging in a friend's or relative's home declined. Also, the number of person-visits to and through Michigan by bus more than tripled between 1988 and 1989.

Table 6-3. Volume and economic impact of Canadian overnight travel to and through Michigan, 1979-1989.

Variable	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
TOTAL PERSON-VISITS (000s)	813	765	749	765	903	819	880	811	880	1,071	1,333
TOTAL PERSON-NIGHTS (000s)	2,059	2,054	2,027	2,007	2,311	2,092	2,243	1,975	2,110	2,572	3,216
AVERAGE NIGHTS/VISIT	2.5	2.7	2.7	2.6	2.6	2.6	2.5	2.4	2.4	2.4	2.4
TOTAL SPENDING (millions of U.S. dollars)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	50	54	60	82	117
TOTAL PER CAPITA SPENDING (U.S. dollars)	39	52	56	56	69	70	57	66	75	76	88
DAILY PER CAPITA SPENDING (U.S. dollars)	15	19	21	21	27	27	22	27	31	32	36

NOTE: A "person-visit" is a visit to Michigan by a Canadian on a trip of one or more nights. Michigan may have been visited more than once on a given trip and may not have been the primary destination of the trip. Data are based on sample surveys of Canadian travelers on overnight trips.

SOURCES: U.S. Travel Service. 1981. A Report on Canadian Tourism to the United States. Washington, D.C.: U.S. Travel Service.

U.S. Travel and Tourism Administration. Canadian Travel to the United States, annual. Washington, D.C.: U.S. Travel and Tourism Administration.

Table 6-4. Number of person-visits to and through Michigan by Canadians on overnight trips, by selected travel-related variables, 1985-89.

Variable	1985 Person-Visits (000s)	%	1986 Person-Visits (000s)	%	1987 Person-Visits (000s)	%	1988 Person-Visits (000s)	%	1989 Person-Visits (000s)	%
TYPE OF TRANSPORT										
Auto	780.0	88.6	728.7	89.9	812.8	92.4	989.6	92.4	1,198.4	89.9
Plane	33.1	3.8	33.5	4.1	34.2	3.9	34.0	3.2	31.3	2.3
Bus	24.2	2.8	20.5	2.5	9.2	1.0	26.7	2.5	86.4	6.5
Rail	9.1	1.0	9.1	1.1	10.6	1.2	14.6	1.4	13.2	1.0
Boat	15.3	1.7	12.6	1.6	9.0	1.0	0.0	0.0	0.2	0.0
Other	18.7	2.1	6.3	0.8	4.3	0.5	5.7	0.5	3.9	0.3
Total	880.4	100.0	810.6	100.0	880.1	100.0	1,070.6	100.0	1,333.3	100.0
TYPE OF LODGING										
Camping	83.8	9.5	64.3	7.9	74.1	8.4	89.0	8.3	132.6	9.9
Owned/rented apartment	15.1	1.7	15.9	2.0	13.5	1.5	10.7	1.0	23.1	1.7
Hotel/motel	399.4	45.4	387.8	47.8	447.1	50.8	543.1	50.7	734.0	55.1
Home of friend/relative	360.1	40.9	312.1	38.5	316.2	36.0	364.6	34.1	393.8	29.5
Other/combination	22.0	2.5	30.6	3.8	29.2	3.3	63.3	5.9	49.7	3.7
Total	880.4	100.0	810.6	100.0	880.1	100.0	1,070.6	100.0	1,333.3	100.0
PURPOSE OF TRIP										
Business/convention	107.5	12.2	88.7	10.9	101.3	11.5	155.9	14.6	118.5	8.9
Visit relatives/friends	407.3	46.3	366.6	45.2	424.7	48.3	439.0	41.0	490.9	36.8
Pleasure	284.4	32.3	247.6	30.5	273.7	31.1	384.1	35.9	564.4	42.3
Other/combination	81.2	9.2	107.7	13.3	80.4	9.1	91.6	8.6	159.6	12.0
Total	880.4	100.0	810.6	100.0	880.1	100.0	1,070.6	100.0	1,333.3	100.0
QUARTER VISITED										
January-March	135.1	15.4	131.5	16.2	144.2	16.4	152.3	14.2	199.7	15.0
April-June	213.0	24.2	193.5	23.9	209.5	23.8	229.4	21.4	274.8	20.6
July-September	363.3	41.2	316.2	39.0	331.4	37.6	461.6	43.1	584.1	43.8
October-December	169.1	19.2	169.5	20.9	195.0	22.2	227.2	21.2	274.8	20.6
Total	880.4	100.0	810.6	100.0	880.1	100.0	1,070.6	100.0	1,333.3	100.0
PROVINCE OF RESIDENCE										
Nova Scotia	5.4	0.6	3.4	0.4	1.3	0.1	2.4	0.2	1.4	0.1
New Brunswick	1.8	0.2	2.3	0.3	1.6	0.2	4.8	0.4	1.5	0.1
Quebec	19.4	2.2	18.0	2.2	22.2	2.5	15.3	1.4	17.9	1.3
Ontario	804.4	91.4	732.8	90.4	789.9	89.8	981.0	91.6	1,237.5	92.8
Manitoba	19.4	2.2	22.8	2.8	29.6	3.4	24.4	2.3	26.6	2.0
Saskatchewan	7.2	0.8	6.8	0.8	7.8	0.9	9.3	0.9	11.1	0.8
Alberta	15.3	1.7	14.5	1.8	14.7	1.7	17.6	1.6	17.3	1.3
British Columbia	6.2	0.7	9.3	1.1	11.5	1.3	14.3	1.3	19.2	1.4
Other	1.3	0.2	0.7	0.1	1.4	0.2	1.3	0.1	0.8	0.1
Total	880.4	100.0	810.6	100.0	880.1	100.0	1,070.6	100.0	1,333.3	100.0

NOTE: A "person-visit" is a visit to Michigan by a Canadian on a trip of one or more nights. Michigan may have been visited more than once on a given trip and may not have been the primary destination of the trip. Data are based on sample surveys of Canadian travelers on overnight trips. Details may not add to totals due to rounding error.

SOURCE: U.S. Travel and Tourism Administration. Canadian Travel to the United States, annual. Washington, D.C.: U.S. Travel and Tourism Administration.

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CHAPTER 7

COMMERCIAL LODGING IN MICHIGAN

Daniel M. Spotts

Introduction

Commercial lodging is certainly one of the most basic and important sectors of Michigan's travel and tourism industry. This is due in part to the fact that lodging establishments are so unambiguously in the business of primarily serving travelers, in contrast to many other sectors of the industry, such as restaurants and gasoline service stations, which are generally more oriented to serving local residents as well as travelers.

To provide some basic insights into commercial lodging in Michigan, this chapter describes: (1) the number of lodging establishments in Michigan by county and type of establishment, (2) trends in the sales performance of lodging businesses in the state, the number of jobs supported by such businesses, and the number of hotel/motel systems operating in Michigan, (3) the characteristics of some of Michigan's "top performing" lodging establishments, and (4) travelers' preferences for lodging amenities. More detailed information on Bed and Breakfasts (B&Bs) as one type of lodging establishment in Michigan may be found in the next chapter.

An Inventory of Lodging Establishments in Michigan

In 1986 the TTRRC conducted a comprehensive, county-level inventory of commercial lodging establishments in Michigan. A "lodging establishment" was defined as any commercial establishment that rented one or more guest rooms to travelers by the night, week, month, or season, including establishments that rented condominiums to travelers (hereinafter termed "condominium establishments").

Methods

Since lodging establishments in Michigan are not licensed, no comprehensive list of such establishments existed and it was necessary to assemble our own list from various sources. The sources were the Yellow Pages of telephone directories, the American Hotel and Motel Association's annual *Directory of Hotel & Motel Systems*, a publication entitled *Michigan's Bed & Breakfast and Historic Inns* (Michigan Travel Bureau, n.d.), the Michigan Lodging Association's membership roster, and a Michigan Department of Treasury printout of taxpayers classified as "Hotels, Motels, and Tourist Courts." None of these sources by themselves constituted a comprehensive list of establishments. For example, the Department of Treasury printout included many entries that were hotel/motel chains as opposed to the individual properties within that chain.

Information on the number of guest rooms in each establishment identified in the inventory was obtained through mail and telephone surveys of the establishments. In the survey process establishments were asked to classify themselves as a "hotel/motel", "cabin/cottage" business, "B&B/historic inn", or "condominium" establishment. Multiple responses (e.g., a motel that also rented cottages) were classified according to the category in which most guest rooms were found. The "B&B/historic inn" category includes historic inns, some of which had over 100 guest rooms (e.g., Grand Hotel, Dearborn Inn), as well as B&Bs,

which typically had far fewer rooms.

Basic Results

The inventory identified 3,489 commercial lodging establishments in Michigan (Table 7-1). Fifty-nine percent of these establishments were hotels or motels, 36% were cabin/cottage establishments, 5% were B&Bs/historic inns, and less than 1% were condominium establishments. Of the 96,503 guest rooms throughout the state, 87% were in hotels or motels, 10% were in cabin/cottage establishments, 2% were in B&Bs/historic inns, and 1% were in condominiums establishments. The fact that hotels and motels constituted 59% of the establishments but 87% of the guest rooms accrued from the greater average number of guest rooms in such establishments compared to most other types of lodging establishments. Hotels and motels on the average included 41 guest rooms per establishment, while B&Bs/historic inns on the average included 13 guest rooms and cabin/cottage establishments 8 guest rooms. The 14 condominium establishments in the state on the average included 45 guest rooms.

An estimated 63% of the lodging establishments were open year-round (Table 7-1). Within individual counties the estimated percentage of year-round operations ranged from a low of 22% in Mackinac County to a high of 100% in Clinton, Isabella, Lapeer, Lenawee, Midland, Saginaw, Shiawassee, and Washtenaw Counties.

Spatial Distribution of Guest Room Supply

The total supply of guest rooms in Michigan was most heavily concentrated in urban counties, perhaps reflecting the high volume of travel related to business and visiting friends and relatives which occurs therein (Figure 7-1). Guest rooms were particularly concentrated in Wayne, Oakland, and surrounding counties in southeast Michigan. Indeed, guest rooms in Wayne and Oakland Counties alone constituted over a quarter (26%) of the state's total guest room supply. Relatively large numbers of guest rooms were also found in the urban counties of Kent, Ingham, Washtenaw, Macomb, Genesee, and Kalamazoo, and in several rural tourist areas, particularly the Mackinac Straits region, northwest Lower Michigan, and Gogebic, Chippewa, Roscommon, and Iosco Counties. Each of these rural areas contains important tourist attractions and/or amenities. For example, the Mackinac Straits region includes major historic sites, northwest Lower Michigan includes Sleeping Bear Dunes National Lakeshore and popular resort communities, Gogebic County includes large downhill ski areas, Chippewa County includes the heavily-visited Soo Locks and part of Tahquamenon Falls State Park, Roscommon County includes two large inland lakes, and Iosco County offers important Great Lakes fishing opportunities. High volumes of both business and pleasure travel may account for the relatively large number of guest rooms in Berrien, Grand Traverse, Marquette, Muskegon, and Saginaw Counties, each of which contain sizeable cities as well as important tourist attractions (e.g., Frankenmuth).

The heavily-traveled I-75 highway corridor between Sault Ste. Marie and Detroit may partially account for the relatively large number of guest rooms in Chippewa, Mackinac, Cheboygan, Otsego, Roscommon, Saginaw, Genesee, and Oakland Counties. Similarly, the heavily-traveled I-94 highway corridor linking Chicago and Detroit may partially account for the relatively large number of guest rooms in Berrien, Kalamazoo, Calhoun, and Washtenaw Counties, and the heavily-traveled I-96 highway corridor may partially account for the relatively large number of guest rooms in Muskegon, Kent, and Ingham Counties. And the confluence of all three highways in Wayne County may partially account for the fact that the latter contained more guest rooms than any other county.

Table 7-1. Inventory of commercial lodging establishments by Michigan county, 1986.

COUNTY	NUMBER OF ESTABLISHMENTS					NUMBER OF GUESTROOMS					PERCENTAGE OF ESTABLISHMENTS OPEN YEAR-ROUND	
	Hotel/ Motel	Cabin/ Cottage	B&B/Historic Inn	Condominium[1]	Total	Hotel/ Motel	Cabin/ Cottage	B&B/Historic Inn	Condominium[1]	Total	%	BASE[2]
Alcona	9	19	2	0	30	94	121	10	0	225	50.0	26
Alger	24	26	1	0	51	382	183	5	0	570	48.9	47
Allegan	24	6	15	0	45	409	65	110	0	584	65.0	40
Alpena	18	32	0	0	50	493	177	0	0	670	35.6	45
Antrim	16	38	4	1	59	897	247	11	19	1,174	38.5	52
Arenac	8	2	0	0	10	100	17	0	0	117	88.9	9
Baraga	6	5	0	0	11	82	24	0	0	106	70.0	10
Barry	2	5	0	0	7	28	27	0	0	55	42.9	7
Bay	23	0	0	0	23	680	0	0	0	680	94.4	18
Benzie	18	38	2	1	59	412	267	22	26	727	41.1	56
Berrien	38	16	6	0	60	1,575	283	40	0	1,898	70.2	57
Branch	8	13	1	0	22	217	60	8	0	285	57.1	21
Calhoun	23	0	6	0	29	1,275	5	43	0	1,323	96.6	29
Cass	3	10	0	0	13	37	70	0	0	107	23.1	13
Charlevoix	42	23	8	0	73	977	228	48	0	1,253	59.1	66
Cheboygan	102	54	1	1	158	2,139	527	1	12	2,679	26.8	138
Chippewa	64	74	2	0	140	1,173	550	76	0	1,799	38.1	126
Clare	15	11	1	0	27	210	48	60	0	318	66.7	24
Clinton	5	0	0	0	5	56	0	0	0	56	100.0	5
Crawford	20	12	0	0	32	473	70	0	0	543	71.4	28
Delta	26	18	1	0	45	703	114	24	0	841	61.4	44
Dickinson	20	8	0	0	28	491	58	0	2	551	76.9	26
Eaton	4	3	1	0	8	77	21	2	0	100	75.0	8
Emmet	28	34	9	2	73	1,200	327	183	88	1,798	49.2	63
Genesee	39	2	6	0	47	2,296	9	24	0	2,329	97.6	41
Gladwin	6	2	0	0	8	77	7	0	0	84	62.5	8
Gogebic	37	26	1	2	66	1,070	477	15	122	1,684	81.4	59
Grand Traverse	55	47	5	2	109	2,738	356	20	47	3,161	60.2	98
Gratiot	8	0	1	0	9	240	0	3	0	243	85.7	7
Hillsdale	6	1	1	0	8	136	5	5	0	146	83.3	6
Houghton	23	19	1	0	43	561	112	2	0	675	54.8	42
Huron	29	13	3	0	45	407	134	9	0	550	50.0	42
Ingham	44	3	3	1	51	3,835	41	7	3	3,886	93.6	47
Ionia	7	1	2	0	10	105	5	6	0	116	87.5	8
Iosco	37	58	0	0	95	628	518	0	1	1,147	53.3	75
Iron	18	26	0	0	44	286	152	0	0	438	52.9	34
Isabella	7	0	2	0	9	357	0	6	0	363	100.0	9
Jackson	20	0	1	0	21	928	0	4	0	932	95.2	21
Kalamazoo	26	2	4	0	32	2,105	4	24	0	2,133	96.6	29
Kalkaska	9	9	0	0	18	121	49	0	0	170	71.4	14
Kent	53	2	2	0	57	4,399	41	11	0	4,451	96.2	53
Keweenaw	16	7	0	0	23	302	113	0	0	415	31.8	22
Lake	11	13	0	0	24	134	79	0	0	213	63.6	22
Lapeer	5	0	0	0	5	89	0	0	0	89	100.0	5

Leelanau	15	50	12	1	78	418	327	64	217	1,026	25.4	67
Lenawee	12	1	3	0	16	277	10	13	0	300	100.0	14
Livingston	12	4	0	0	16	461	137	0	0	598	84.6	13
Luce	18	20	1	0	39	270	167	5	0	442	40.5	37
Mackinac	75	70	9	0	154	1,814	505	642	0	2,961	21.6	139
Macomb	54	2	2	0	58	2,965	10	6	0	2,981	96.2	53
Manistee	25	31	1	0	57	535	227	3	8	773	41.7	48
Marquette	34	9	0	0	43	1,042	63	0	1	1,106	75.0	40
Mason	29	36	2	0	67	602	365	7	2	976	45.9	61
Mecosta	4	7	2	0	13	184	26	11	0	221	75.0	12
Menominee	13	0	0	0	13	190	15	0	0	205	46.2	13
Midland	9	0	1	0	10	797	0	2	0	799	100.0	10
Missaukee	5	4	0	0	9	64	28	0	0	92	77.8	9
Monroe	19	0	0	0	19	653	2	0	0	655	89.5	19
Montcalm	12	1	3	0	16	174	3	28	0	205	83.3	12
Montmorency	11	16	0	0	27	179	110	0	0	289	52.2	23
Muskegon	37	12	1	0	50	1,341	100	3	0	1,444	68.9	45
Newaygo	6	19	1	0	26	61	152	6	0	219	50.0	24
Oakland	99	2	1	0	102	9,621	28	65	0	9,714	97.8	93
Oceana	8	22	1	0	31	128	262	6	0	396	26.7	30
Ogemaw	9	13	1	0	23	206	79	6	0	291	68.4	19
Ontonagon	22	12	0	0	34	333	89	0	3	425	82.1	28
Osceola	6	4	1	0	11	62	19	2	0	83	81.8	11
Oscoda	11	11	0	0	22	107	85	0	0	192	60.0	20
Otsego	25	14	1	0	40	1,015	122	40	0	1,177	73.0	37
Ottawa	18	10	10	1	39	699	82	46	16	843	67.6	34
Presque Isle	11	12	0	0	23	141	42	0	0	183	68.4	19
Roscommon	47	96	1	0	144	689	608	1	0	1,298	60.7	112
Saginaw	34	0	4	0	38	1,769	0	26	0	1,795	100.0	36
Saint Clair	37	5	2	1	45	956	56	11	22	1,045	92.3	39
Saint Joseph	15	11	2	0	28	518	87	14	0	619	61.5	26
Sanilac	16	10	3	0	29	240	66	12	0	318	57.1	28
Schoolcraft	21	36	2	0	59	351	222	18	0	591	24.0	50
Shiawassee	6	0	5	0	11	173	0	12	0	185	100.0	11
Tuscola	8	0	1	0	9	107	0	3	0	110	75.0	8
Van Buren	13	7	5	1	26	331	139	78	34	582	48.0	25
Washtenaw	37	0	3	0	40	3,194	7	15	0	3,216	100.0	35
Wayne	202	1	3	0	206	15,474	2	319	0	15,795	98.4	189
Wexford	23	13	0	0	36	553	111	0	5	669	88.2	34
Total	2,060	1,239	176	14	3,489	83,688	9,944	2,243	628	96,503	62.8	3,123

NOTE: Figures include all commercial establishments that rented one or more guest rooms to travelers by the night, week, month, or season.

[1] Condominiums rented to travelers.

[2] Number of establishments upon which percentages are based. Not all establishments provided the requested information on whether they operated year-round.

SOURCE: Travel, Tourism, and Recreation Resource Center, Michigan State University.

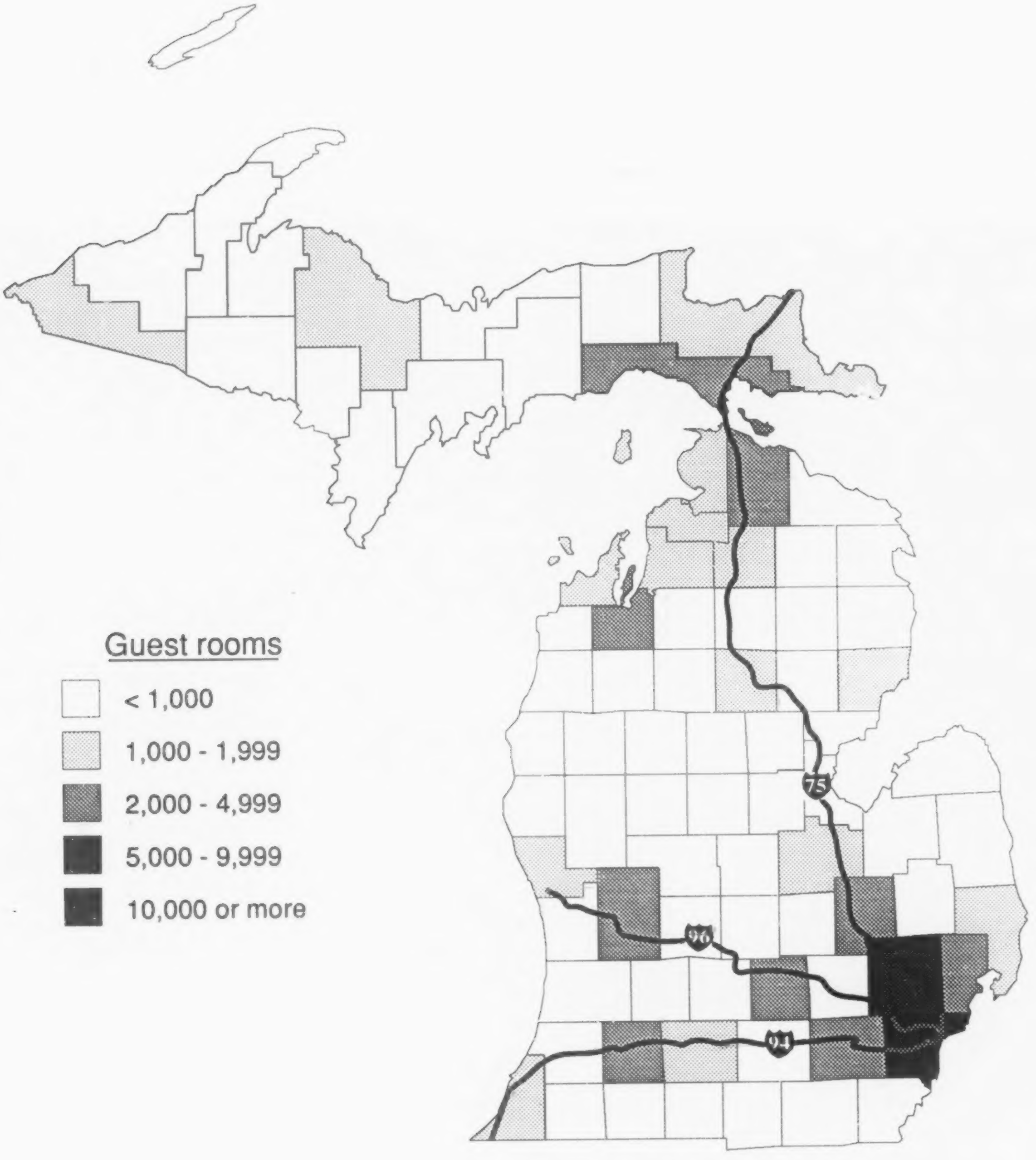

Guest rooms
< 1,000
1,000 - 1,999
2,000 - 4,999
5,000 - 9,999
10,000 or more
75
96
94

Figure 7-1. Total number of guest rooms in lodging establishments by Michigan county, 1986.

Relatively few guest rooms were found in the Keweenaw Peninsula, the central Upper Peninsula, many counties in northeast Lower Michigan, west central Michigan, the Thumb region, or most of the extreme southern portion of the Lower Peninsula. Each of these areas lacks a large city, a major tourist attraction, or an interstate highway.

Changes in the Supply of Affiliated Lodging in Michigan

Many of the lodging establishments in Michigan are affiliated with some type of hotel/motel system consisting of a collection of properties and organized as a lodging chain, referral group, or management company. Indeed, in 1986 the 38,282 guest rooms in affiliated lodging establishments in Michigan represented about 40% of the statewide lodging room supply as documented in the TTRRC inventory. A knowledge of changes in the supply of affiliated commercial lodging in Michigan can therefore provide useful insights into changes in the overall character of commercial lodging in the state.

In 1979, 32 hotel/motel systems operated in Michigan and managed a total of 211 properties and 26,629 guest rooms (Table 7-2). By 1989, the number of systems, affiliated properties, and rooms each had more than doubled (Table 7-3). Some of this increase resulted from independent properties becoming affiliated with a hotel/motel system as well as from the construction of new properties. In general, the number of systems and affiliated properties and rooms in Michigan each climbed steadily between 1979 and 1989, while the average number of properties per system, rooms per system, and rooms per property remained more or less constant by comparison (Table 7-4).

In 1979 the ten hotel/motel systems with the largest number of guest rooms in Michigan accounted for 80% of the total number of affiliated guest rooms in the state (Table 7-2). In 1989, as a result of growth in the number of systems doing business in Michigan, the state's affiliated room supply was less concentrated in only a few systems and the top ten systems accounted for only 55% of the affiliated rooms in Michigan (Table 7-3).

In both 1979 and 1989 Holiday Inns, Inc. had the largest percentage of affiliated rooms in the state, although this percentage dropped from 28% in 1979 to 14% in 1989. Between 1979 and 1989 the number of guest rooms in Michigan in the Days Inn system increased more than eight-fold, propelling this system from 13th place in number of affiliated rooms in 1979 to second place in 1989. Similarly, between 1979 and 1989 the number of guest rooms in Michigan in the Quality Inn system increased more than fifteen-fold, propelling this system from 22nd place in 1979 to third place in 1989.

Employment in Lodging Establishments in Michigan

According to the U.S. Bureau of the Census, the 1,203 hotels, motels, and tourist courts in Michigan which paid Social Security (FICA) taxes in 1988 employed 26,695 persons and disbursed a total payroll of $250 million (Table 7-5). In each of the years 1983-88, the majority of such establishments employed fewer than five persons.

The average number of jobs in hotels, motels, and tourist courts in Michigan by month during 1977-88 is shown in Table 23-8 (page 469). These statistics show that steady growth occurred in the annual average number of jobs supported by such establishments from 1977 through 1979. This was followed by a decline in annual average employment through 1982, reflecting the recession of the early 1980s, and then steady increases in employment from 1983 through 1988. In each of the years 1977-88, the statistics display a seasonal pattern with the number of jobs consistently peaking in July or August.

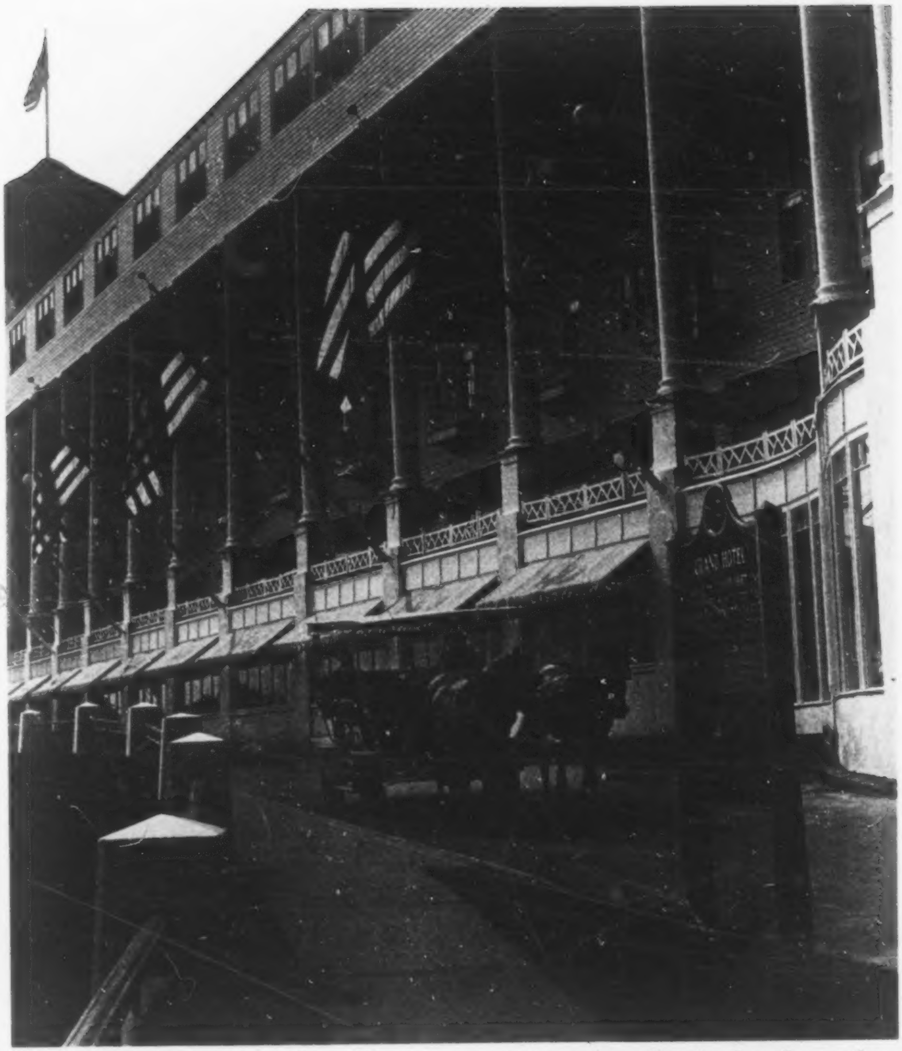
Table 7-2. Inventory of hotel and motel systems operating at least one property in Michigan, 1979.

	HOTEL/MOTEL SYSTEM[1]	PROPERTIES IN MICHIGAN		GUESTROOMS IN MICHIGAN		
Rank		Number	Percent	Number	Percent	Cumulative Percent
1	Holiday Inns, Inc.	48	22.7	7,346	27.6	27.6
2	Best Western International	35	16.6	2,230	8.4	36.0
3	Ramada Inns, Inc.	16	7.6	2,139	8.0	44.0
4	Hilton Hotels Corporation	9	4.3	2,010	7.5	51.5
5	Western International Hotels	2	0.9	1,817	6.8	58.3
6	Howard Johnson Company	13	6.2	1,506	5.7	64.0
7	Sheraton Hotels & Inns Worldwide	8	3.8	1,503	5.6	69.6
8	Red Roof Inns, Inc.	13	6.2	1,297	4.9	74.5
9	Hyatt Hotels Corporation	1	0.5	768	2.9	77.4
10	Ploss Hotels Corporation	1	0.5	700	2.6	80.0
11	Marriott Hotels	2	0.9	478	1.8	81.8
12	Travelodge International, Inc.	8	3.8	468	1.8	83.6
13	Days Inns of America, Inc.	4	1.9	462	1.7	85.3
14	Best Value Inns (BMHA, Inc.)	9	4.3	426	1.6	86.9
15	Milner Hotels & Inns	3	1.4	355	1.3	88.2
16	Motel 6, Inc.	3	1.4	339	1.3	89.5
17	Harley Hotels, Inc.	2	0.9	320	1.2	90.7
18	Knights Inn	3	1.4	317	1.2	91.9
19	Pick Americana Hotels	2	0.9	260	1.0	92.9
20	Friendship Inns International	9	4.3	259	1.0	93.9
21	Stouffer Hotels	1	0.5	232	0.9	94.8
22	Quality Inns	2	0.9	222	0.8	95.6
23	Host International Hotels	1	0.5	200	0.8	96.4
24	Affordable Inns, Inc.	2	0.9	180	0.7	97.1
25	Radisson Hotel Corporation	1	0.5	178	0.7	97.8
26	Motor Hotel Management, Inc.	1	0.5	120	0.5	98.3
27	L-K Motels, Inc.	3	1.4	117	0.4	98.7
28	Rodeway Inns of America	1	0.5	101	0.4	99.1
29	Imperial '400' National, Inc.	2	0.9	100	0.4	99.5
30	Heritage Management Services, Inc.	1	0.5	66	0.2	99.7
31	Budget Host Inns	2	0.9	64	0.2	99.9
32	Magic Key Inns of America, Inc.	3	1.4	49	0.2	100.1
	Total	211	100.0	26,629	100.0	

[1] A "hotel/motel system" is a system operating three or more hotels, motels, or resorts, at least one of which is located in Michigan. This definition includes referral groups and management companies managing one or more properties not listed elsewhere in the source.

NOTE: A property that is part of a chain but owned and/or operated by a management company is listed in the source under both the chain and the management company. In such cases the property was included in the counts for the franchise corporation only. Thus each affiliated lodging establishment in Michigan was counted only once.

SOURCE: American Hotel and Motel Association. 1980. 1980 Directory of Hotel and Motel Systems. New York: American Hotel Association Directory Corporation.



The Grand Hotel on Mackinac Island is one of the outstanding landmarks on the Great Lakes.

Table 7-3. Inventory of hotel and motel systems operating at least one property in Michigan, 1989.

Rank	HOTEL/MOTEL SYSTEM[1]	PROPERTIES IN MICHIGAN Number	PROPERTIES IN MICHIGAN Percent	GUESTROOMS IN MICHIGAN Number	GUESTROOMS IN MICHIGAN Percent	GUESTROOMS IN MICHIGAN Cumulative Percent
1	Holiday Inns, Inc.	44	10.2	7,843	14.1	14.1
2	Days Inns of America, Inc.	30	7.0	3,716	6.7	20.8
3	Quality Inns	37	8.6	3,377	6.1	26.9
4	Best Western International, Inc.	45	10.4	3,362	6.0	32.9
5	Cardinal Lodging Group, Inc.	30	7.0	3,250	5.8	38.7
6	Red Roof Inns, Inc.	20	4.6	2,104	3.8	42.5
7	Radisson Hotel Corporation	7	1.6	1,806	3.2	45.7
8	Hilton Hotels Corporation	7	1.6	1,728	3.1	48.8
9	Sheraton Hotels, Inns, Resorts and Suites Worldwide	8	1.9	1,704	3.1	51.9
10	Ramada, Inc.	12	2.8	1,632	2.9	54.8
11	Westin Hotels and Resorts	1	0.2	1,400	2.5	57.3
12	Marriott Hotels and Resorts	6	1.4	1,324	2.4	59.7
13	Super 8 Motels, Inc.	21	4.9	1,284	2.3	62.0
14	Hyatt Hotels Corporation	2	0.5	1,139	2.0	64.0
15	Hampton Inn Hotel Division	8	1.9	1,058	1.9	65.9
16	Courtyard by Marriott	7	1.6	1,034	1.9	67.8
17	Residence Inn by Marriott	9	2.1	924	1.7	69.5
18	Fairfield Inn by Marriott	6	1.4	796	1.4	70.9
19	Signature Inns, Inc.	6	1.4	776	1.4	72.3
20	Howard Johnson Division	8	1.9	738	1.3	73.6
21	Club Resorts Inc.	1	0.2	734	1.3	74.9
22	Depalma Hotel Corporation	2	0.5	694	1.2	76.1
23	Motel 6, Inc.	6	1.4	671	1.2	77.3
24	Clarion Hotels & Resorts	3	0.7	622	1.1	78.4
25	Dillon Inns	4	0.9	477	0.9	79.3
26	Budgetel Inns, Inc.	5	1.2	475	0.9	80.2
27	Econo Lodges of America, Inc.	6	1.4	471	0.8	81.0
28	Crescent Hotels	1	0.2	420	0.8	81.8
29	Milner Hotels, Inc.	3	0.7	405	0.7	82.5
30	Select Hotel Management, Inc.	3	0.7	402	0.7	83.2
31	The Prudential Property Company	1	0.2	396	0.7	83.9
32	Park Inns International, Inc.	3	0.7	395	0.7	84.6
33	Trusthouse Forte Hotels, Inc.	4	0.9	374	0.7	85.3
34	Rodeway Inns International	3	0.7	369	0.7	86.0
35	Regal-Aircoa Companies, Inc.	2	0.5	358	0.6	86.6
36	Interstate Hotels Corporation	1	0.2	350	0.6	87.2
37	Envoy Inns, Inc.	3	0.7	332	0.6	87.8
38	The Ritz-Carlton Hotel Company	1	0.2	308	0.6	88.4
39	Budget Host Inns	12	2.8	299	0.5	88.9
40	Harley Hotels	2	0.5	296	0.5	89.4
41	Westbrooke Hotel Corporation	1	0.2	290	0.5	89.9

42	L-K Motels, Inc.	5	1.2	286	0.5	90.4
43	The Stafford Group	2	0.5	260	0.5	90.9
44	Omni Hotels	1	0.2	253	0.5	91.4
45	Guest Quarters Suite Hotels	1	0.2	252	0.5	91.9
46	Thomas Edison Inns, Inc.	2	0.5	248	0.4	92.3
47	Stouffer Hotel Company	1	0.2	245	0.4	92.7
48	Embassy Suites, Inc.	1	0.2	240	0.4	93.1
49	Radnor Corporation	2	0.5	236	0.4	93.5
50	Park Place Hotels	2	0.5	228	0.4	93.9
51	Compri Hotel Systems	1	0.2	200	0.4	94.3
52	Carlton Lodge, Inc.	2	0.5	196	0.4	94.7
53	Premier Hospitality	1	0.2	189	0.3	95.0
54	Trans Inns Management, Inc.	2	0.5	180	0.3	95.3
55	Lamp Post Motel, Inc.	3	0.7	179	0.3	95.6
56	RHC Holding Corporation	2	0.5	177	0.3	95.9
57	Country Hospitality Inns	2	0.5	161	0.3	96.2
58	Drury Inns, Inc.	1	0.2	154	0.3	96.5
58	Pine Grove Corporation	2	0.5	154	0.3	96.8
59	Wyndham Hotels & Resorts	1	0.2	152	0.3	97.1
60	Hotel Investors Corporation	1	0.2	151	0.3	97.4
61	Pickett Hotel Company	1	0.2	150	0.3	97.7
62	Coastal Hotel Group	1	0.2	149	0.3	98.0
62	Midway Hospitality Corporation	1	0.2	149	0.3	98.3
63	Clubhouse Inns of America, Inc.	1	0.2	129	0.2	98.5
64	La Quinta Motor Inns, Inc.	1	0.2	122	0.2	98.7
65	Brilyn, Inc.	1	0.2	120	0.2	98.9
66	Hospitality International, Inc.	2	0.5	115	0.2	99.1
67	Exel Inns of America, Inc.	1	0.2	111	0.2	99.3
68	Preferred Hotels Worldwide	1	0.2	109	0.2	99.5
69	Sundowner Int'l Hotel Corp./Best Value Inns/Superior Motels/Sundowner Inns/ Travel Host Motels	1	0.2	99	0.2	99.7
70	SRS Hotels/Steigenberger Reservation Services, Inc.	1	0.2	87	0.2	99.9
71	Friendship Inns Franchising Corp.	1	0.2	60	0.1	100.0
72	Upton Inns, Inc.	1	0.2	58	0.1	100.1
73	Independent Motels of America, Inc.	1	0.2	28	0.1	100.2
	Total	431	100.0	55,760	100.0	

[1] A "hotel/motel system" is a system operating three or more hotels, motels, or resorts, at least one of which is located in Michigan. This definition includes referral groups and management companies managing one or more properties not listed elsewhere in the source.

NOTE: A property that is part of a chain but owned and/or operated by a management company is listed in the source under both the chain and the management company. In such cases the property was included in the counts for the franchise corporation only. Thus each affiliated lodging establishment in Michigan was counted only once.

SOURCE: American Hotel and Motel Association. 1990. 1990 Directory of Hotel and Motel Systems. New York: American Hotel Association Directory Corporation.

Table 7-4. Trends in the supply of affiliated commercial lodging in Michigan, 1974-89.

YEAR OF PUBLICATION	YEAR OF DATA	NO.HOTEL/MOTEL SYSTEMS WITH AT LEAST ONE PROPERTY IN MI[1]	NO.AFFILIATED PROPERTIES IN MI	NO.AFFILIATED ROOMS IN MI	PERCENT CHANGE FROM PREVIOUS YEAR IN...			AVERAGES		
					No. Systems	No. Properties	No. Rooms	Properties Per System	Rooms Per System	Rooms Per Property
1975	1974	28	175	24,402				6.2	871.5	139.4
1976	1975	26	181	23,024	-7.1	3.4	-5.6	6.9	885.5	127.2
1977	1976	30	222	27,497	15.3	22.6	19.4	7.4	916.6	123.9
1978	1977	31	220	27,195	3.3	-0.9	-1.1	7.1	877.3	123.6
1979	1978	34	222	25,779	9.7	0.9	-5.2	6.5	758.2	116.1
1980	1979	32	211	26,629	-5.9	-4.9	3.2	6.6	832.2	126.2
1981	1980	30	217	27,940	-6.2	2.8	4.9	7.2	931.3	128.8
1982	1981	35	227	28,709	16.6	4.6	2.7	6.5	820.3	126.5
1983	1982	35	236	29,222	0.0	3.9	1.8	6.7	834.9	123.8
1984	1983	35	249	29,617	0.0	5.5	1.3	7.1	846.2	118.9
1985	1984	41	266	32,590	17.1	6.8	10.0	6.5	794.9	122.5
1986	1985	44	271	34,079	7.3	1.9	4.6	6.2	774.5	125.8
1987	1986	58	294	38,282	31.8	8.5	12.3	5.1	660.0	130.2
1988	1987	60	324	43,891	3.4	10.2	14.6	5.4	731.5	135.5
1989	1988	68	380	49,596	13.3	17.3	13.0	5.6	729.4	130.5
1990	1989	75	431	55,760	10.3	13.4	12.4	5.7	743.5	129.4

[1] A "hotel/motel system" is a system operating three or more hotels, motels, or resorts, at least one of which is located in Michigan. This definition includes referral groups and managing companies managing one or more properties not listed elsewhere in the source.

NOTE: A property that is part of a chain but owned by a management company is listed in the source under both the chain and the management company. Such duplicate listings were deleted in making the above counts.

SOURCE: Derived from information presented in the American Hotel and Motel Association's annual Directory of Hotel and Motel Systems. New York: American Hotel Association Directory Corporation.

Table 7-5. Selected economic characteristics of hotels, motels, and tourist courts (SIC 701) in Michigan, 1983-88.

Year	Number of employees for week including March 12	Annual payroll ($000)	Number of establishments	Percentage of establishments employing... 1-4 persons	5-9 persons	10-19 persons	20-49 persons	50-99 persons	100-249 persons	250-499 persons	500-999 persons	1000+ persons
1983	20,464	176,041	1,149	60.0	12.8	9.5	9.5	3.8	3.6	0.5	0.3	0.0
1984	21,663	187,996	1,091	57.6	13.0	10.5	9.6	4.1	4.0	0.7	0.2	0.1
1985	23,536	204,778	1,074	58.1	12.0	10.1	10.1	4.1	4.3	1.0	0.3	0.1
1986	24,086	219,728	1,092	57.5	11.4	11.1	10.0	4.7	3.8	1.3	0.2	0.1
1987	26,444	239,832	1,248	57.4	12.0	10.5	10.8	4.0	3.6	1.3	0.2	0.1
1988	26,695	249,656	1,203	53.9	13.5	10.6	11.6	4.9	4.5	0.7	0.2	0.1

NOTE: Figures pertain only to establishments that paid Social Security (FICA) taxes.

SOURCE: U.S. Bureau of the Census. County Business Patterns: Michigan, annual. Table 1B.

Sales Performance of Lodging Establishments in Michigan

Hotels, motels, and tourist courts in Michigan collect a 4% sales tax on the sale of food, beverages, and sundries on their premises, and a 4% use tax on the rental of guest rooms. Statistics on these tax collections provided by the Michigan Department of Treasury are useful indicators of the performance of the state's lodging enterprises. Sales tax collection figures mostly reflect food and beverage sales within lodging establishments (including those to local residents), use tax collection figures reflect guest room rentals, and figures on the sum of sales and use tax collections provide an indication of the overall performance of these businesses.

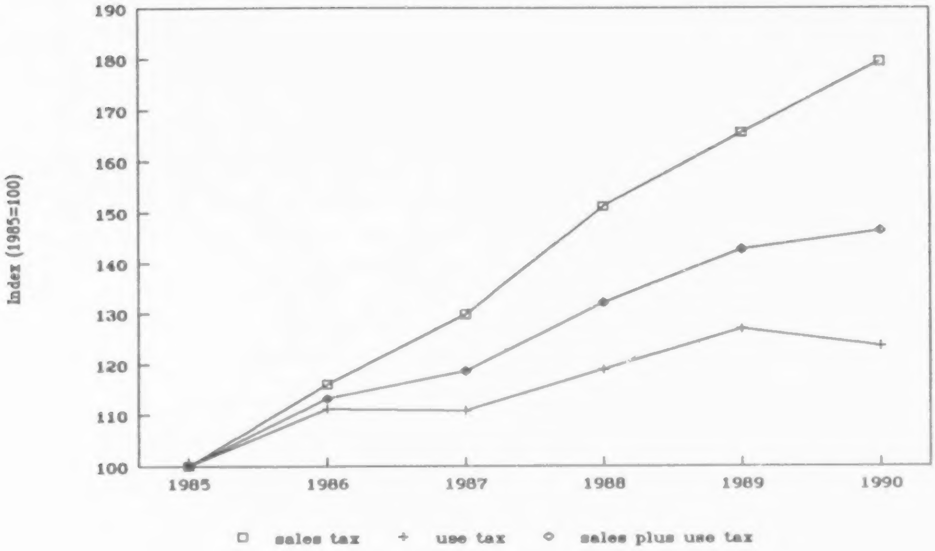
Recent trends in lodging tax collections in Michigan are portrayed in Figure 7-2. Since changes in these statistics reflect changes in the prices charged at lodging establishments as well as changes in the amount of spending therein, adjusted (i.e., deflated) tax collections as well as unadjusted tax collections are shown in the figure. Sales tax figures were deflated according to annual fluctuations in the "Food Away From Home" category of the Detroit-Ann Arbor Consumer Price Index; use tax collections were deflated according to annual fluctuations in the "Lodging While Out of Town" category of the U.S. Consumer Price Index. Since trends in room prices in Michigan may have differed to some extent from those of the entire nation, a use tax deflator pertaining strictly to Michigan would obviously be preferable to one pertaining to the nation as a whole. However, at present no such deflator is available.

The values graphed in Figure 7-2 are index numbers as opposed to raw values. Index numbers are simply raw values expressed as percentages of base year values, in this case 1985 tax collections. The use of index numbers places the three variables on the same percentage scale so they can be more easily compared. It does not change the values of "average annual change" reported or the basic pattern of the trends plotted from what would have emerged if raw values had been employed.

The trends portrayed show a steady increase in adjusted sales tax collections between 1985 and 1990. During the same period adjusted use tax collections generally increased as well, but this overall trend was attended by declines between 1986 and 1987 and between 1989 and 1990. The drop in 1990 to some extent may have resulted from increased fuel prices following the Iraqi invasion of Kuwait and an economic downturn. Overall, during 1985-90 adjusted sales tax collections increased at an average annual rate of 12.4%, adjusted use tax collections increased at an average annual rate of 3.7%, and the sum of adjusted sales tax collections and adjusted use tax collections increased at an average annual rate of 7.7%.

"Top Performing" Lodging Establishments in Michigan

Lodging Hospitality magazine annually conducts a mail survey of its U.S. subscribers and reports the characteristics of 400 respondent properties it considers "top performers" on the basis of sales per guest room. The 400 "top performers" so identified included 12 Michigan properties in 1988, eight Michigan properties in 1989, and eight Michigan properties in 1990 (Table 7-6). Weber's Inn in Ann Arbor was a "top performer" in both the 1988 and 1989 surveys, and the Holiday Inn in Benton Harbor was a "top performer" in both the 1988 and 1990 surveys. Weber's Inn had the highest total sales per room of Michigan's "top performers" in the 1988 and 1989 surveys, and the Grand Hotel on Mackinac Island the highest total sales per room of the state's "top performers" in the 1990 survey. Michigan's "top performers" in the 1990 survey had a combined total sales volume of nearly $68 million and had an average occupancy rate of 68%.



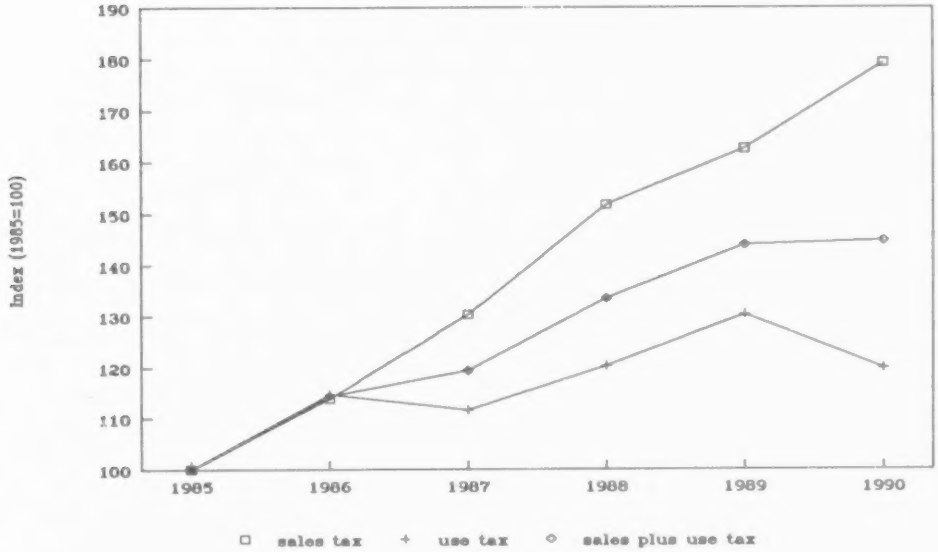
UNADJUSTED TAX COLLECTIONS

Average Annual Change

Sales tax = 12.4%

Use tax = 4.3%

Sales plus use tax = 7.9%



ADJUSTED TAX COLLECTIONS

Average Annual Change

Sales tax = 12.4%

Use tax = 3.7%

Sales plus use tax = 7.7%

Figure 7-2. Sales and use tax collections of hotels, motels, and tourist courts in Michigan, 1985-90.

Table 7-6. Characteristics of "top performing" lodging establishments in Michigan, 1987-89.

Property	Location	Rooms and Suites	Total Sales ($000)	Sales Per Room ($)	Average Occupancy (%)
1988 *Lodging Hospitality* Survey (1987 data)					
Weber's Inn	Ann Arbor	160	7,265	45,406	70
Novi Hilton	Novi	236	10,000	42,373	66
Crystal Mountain Resort	Thompsonville	130	4,780	36,769	53
The Dearborn Inn	Dearborn	179	6,374	35,609	72
Kingsley Inn	Bloomfield Hills	210	7,000	33,333	60
Centennial Park Hotel	Grand Rapids	319	10,067	31,558	64
Valley Plaza Inn	Midland	163	5,000	30,675	70
Holiday Inn	Benton Harbor	151	4,600	30,464	80
Holiday Inn Holidome and Conference Center	Ann Arbor	227	6,000	26,412	60
Sheraton Fashion Square	Saginaw	156	3,762	24,115	81
Midland Holiday Inn	Midland	220	4,800	21,818	76
The Holly Inn	South Haven	60	1,300	21,667	71
1989 *Lodging Hospitality* Survey (1988 data)					
Weber's Inn	Ann Arbor	160	7,283	45,518	70
Van Dyke Park Hotel	Warren	250	10,000	40,000	60
The Berkshire Hilton	Ann Arbor	200	7,000	35,000	70
Radisson Plaza Hotel	Southfield	385	13,244	34,400	56
The Boulevard Suite Hotel	St. Joseph	90	2,700	30,000	71
Best Western Midway Motor Lodge	Lansing	150	3,800	25,333	70
Friendship Inn	South Haven	60	1,450	24,167	73
Holiday Inn of Gaylord	Gaylord	140	3,000	21,428	63
1990 *Lodging Hospitality* Survey (1989 data)					
Grand Hotel	Mackinac Island	317	20,000	63,091	95
Scanticon Conference Center and Hotel	Plymouth	243	12,000	49,383	59
St. Clair Inn	St. Clair	97	4,529	46,690	62
Ojibway Hotel	Sault Ste. Marie	71	3,100	43,662	72
River Place Inn	Detroit	106	4,500	42,453	56
Radisson Plaza Hotel	Southfield	385	13,115	34,065	60
Berkshire Hilton	Ann Arbor	200	6,500	32,500	65
Holiday Inn	Benton Harbor	151	4,175	27,649	72

SOURCES: Anonymous. 1988. "Lodging's 400 Top Performers." *Lodging Hospitality*. 44(9):47-78.

Anonymous. 1989. "Lodging's Top 400 Performers." *Lodging Hospitality*. 45(8):37-89.

Anonymous. 1990. "Lodging's 400 Top Performers." *Lodging Hospitality*. 46(8):59-110.

Travelers' Preferences for Lodging Amenities

An MSU survey in Michigan's central Upper Peninsula during the winter of 1984-85 (Spotts and Mahoney, 1985) measured travelers' preferences for various lodging amenities. The results of this research are shown in Table 7-7. While these statistics of course may not be fully generalizable to other seasons and regions in Michigan, and are now rather dated, they may at least provide some food for thought for some lodging operators in the state. Moreover, they are the only publicly available statistics on the lodging preferences of travelers in Michigan.

The survey involved contacting travel parties at various restaurants, hotels, motels, and attractions in the counties of Alger, Luce, and Schoolcraft, and asking them to fill out a self-administered questionnaire. Only one questionnaire was completed by a given travel party contacted. A total of 390 completed questionnaires were obtained. Surveying took place between December 16, 1984 and March 30, 1985.

Special procedures were employed to facilitate the collection of a large amount of data on travelers' lodging preferences. A list of 23 hotel/motel amenities about which respondents could be asked to state their preferences was developed. Nine of these amenities were included in half the questionnaires that were printed, nine were included in the other half of the questionnaires, and five were included in all questionnaires. Fifty-one percent of the sample completed one version of the questionnaire, and 49% completed the other version.

Information on lodging preferences was elicited only from travel parties who stated that they either had patronized or would patronize a motel or hotel on their trip. These travel parties were asked, "How important is each of the following features to your group when selecting a motel or hotel to stay at on this trip?" A list of 14 amenities followed with spaces for respondents to indicate whether each amenity was "not at all important," "somewhat important," "very important," or "crucial (won't stay at a motel or hotel without it)."

The majority of the respondents that completed a given version of the questionnaire stated that a washer/dryer, whirlpool, sauna, heated indoor pool, winter plug-in, free continental breakfast, storage facility for recreational vehicle or equipment, in-room refrigerator, or in-room kitchenette was "not at all important." The majority of the respondents placed at least some importance on AAA approval, acceptance of major credit cards, the availability of ice, make-your-own coffee in rooms, cable color TVs in rooms, individually-controlled thermostats, a restaurant in the facility, a lounge/bar in the facility, food and beverage vending machines, "800" phone numbers for reservations, and combination tub/showers. The amenities that most respondents considered most important were acceptance of major credit cards, the availability of ice, TVs in room, TV movie channels, direct-dial phones, individually-controlled thermostats, and combination tub/showers. Individually-controlled thermostats and combination tub/showers were especially important.

The preferences of travel parties that stated "business only" as the purpose of their trip differed from those of other travel parties in the case of only a few amenities. Business travelers, compared to other travelers, placed greater importance on acceptance of major credit cards and in-room direct-dial phones, somewhat more importance on a lounge/bar in the facility, and less importance on a storage facility for a recreational vehicle or recreational equipment.

Table 7-7. Lodging preferences of winter travel parties in the central Upper Peninsula of Michigan[1]

HOTEL/MOTEL AMENITY	ALL TRAVEL PARTIES[2]	PURPOSE OF TRIP: "Business Only"	PURPOSE OF TRIP: Other Than "Business Only"	Chi Square	Significance
COIN-OPERATED WASHER AND DRYER	N=299	N=80	N=219		
Not at all important	77%	78%	78%		
Somewhat important	19	20	18		
Very important	3	1	4		
Crucial (won't stay at motel/hotel without it)	1	1	0	1.77	.621
Total	100%	100%	100%		
WHIRLPOOL	N=141	N=37	N=104		
Not at all important	66%	67%	66%		
Somewhat important	23	30	20		
Very important	8	0	11		
Crucial (won't stay at motel/hotel without it)	3	3	3	5.02	.171
Total	100%	100%	100%		
SAUNA	N=136	N=35	N=101		
Not at all important	71%	66%	73%		
Somewhat important	22	31	19		
Very important	5	3	6		
Crucial (won't stay at motel/hotel without it)	2	0	2	3.26	.354
Total	100%	100%	100%		
HEATED INDOOR POOL	N=301	N=81	N=220		
Not at all important	59%	52%	61%		
Somewhat important	29	37	27		
Very important	9	9	9		
Crucial (won't stay at motel/hotel without it)	3	2	3	3.03	.387
Total	100%	100%	100%		
AAA APPROVAL	N=140	N=38	N=102		
Not at all important	40%	42%	38%		
Somewhat important	32	37	30		
Very important	22	13	26		
Crucial (won't stay at motel/hotel without it)	6	8	6	2.54	.468
Total	100%	100%	100%		
MAJOR CREDIT CARDS ACCEPTED	N=144	N=38	N=106		
Not at all important	20%	11%	24%		
Somewhat important	22	10	25		
Very important	41	50	38		
Crucial(won't stay at motel/hotel without it)	17	29	13	10.29	.016
Total	100%	100%	100%		
ICE AVAILABLE	N=141	N=39	N=102		
Not at all important	29%	31%	29%		
Somewhat important	30	33	28		
Very important	30	18	34		
Crucial (won't stay at motel/hotel without it)	11	18	9	4.89	.180
Total	100%	100%	100%		
WINTER PLUG-INS (to keep vehicle engine warm)	N=139	N=37	N=102		
Not at all important	55%	43%	60%		
Somewhat important	27	43	20		
Very important	14	8	16		
Crucial (won't stay at motel/hotel without it)	4	6	4	7.86	.049
Total	100%	100%	100%		
MAKE-YOUR-OWN COFFEE IN ROOM	N=303	N=81	N=222		
Not at all important	42%	44%	41%		
Somewhat important	34	33	35		
Very important	20	20	20		
Crucial (won't stay at motel/hotel without it)	4	3	4	0.62	.892
Total	100%	100%	100%		

Table 7-7. Lodging preferences of winter travel parties in the central Upper Peninsula of Michigan[1] (continued).

HOTEL/MOTEL AMENITY	ALL TRAVEL PARTIES[2]	PURPOSE OF TRIP: "Business Only"	PURPOSE OF TRIP: Other Than "Business Only"	Chi Square	Significance
CABLE COLOR TELEVISION IN ROOM	N=142	N=40	N=102		
Not at all important	10%	5%	12%		
Somewhat important	30	33	29		
Very important	49	50	49		
Crucial (won't stay at motel/hotel without it)	11	12	10	1.63	.653
Total	100%	100%	100%		
COLOR TV IN ROOM WITH CABLE OR SATELLITE MOVIE CHANNEL	N=139	N=39	N=100		
Not at all important	18%	13%	20%		
Somewhat important	42	39	43		
Very important	32	38	29		
Crucial (won't stay at motel/hotel without it)	8	10	8	1.90	.593
Total	100%	100%	100%		
QUEEN-SIZE BED(S) IN ROOM	N=144	N=37	N=107		
Not at all important	31%	24%	34%		
Somewhat important	35	35	35		
Very important	27	33	25		
Crucial (won't stay at motel/hotel without it)	7	8	6	1.39	.708
Total	100%	100%	100%		
24-HOUR DIRECT-DIAL TELEPHONE IN ROOM	N=302	N=83	N=219		
Not at all important	25%	10%	31%		
Somewhat important	30	18	34		
Very important	31	40	28		
Crucial (won't stay at motel/hotel without it)	14	32	7	46.13	.000
Total	100%	100%	100%		
INDIVIDUALLY CONTROLLED THERMOSTAT IN ROOM	N=304	N=83	N=221		
Not at all important	5%	5%	5%		
Somewhat important	15	13	16		
Very important	52	46	54		
Crucial (won't stay at motel/hotel without it)	28	36	25	3.48	.323
Total	100%	100%	100%		
RESTAURANT IN MOTEL OR HOTEL	N=161	N=44	N=117		
Not at all important	26%	18%	29%		
Somewhat important	49	52	47		
Very important	24	30	22		
Crucial (won't stay at motel/hotel without it)	1	0	2	3.09	.377
Total	100%	100%	100%		
LOUNGE/BAR IN MOTEL OR HOTEL	N=160	N=44	N=116		
Not at all important	49%	34%	55%		
Somewhat important	35	52	28		
Very important	14	14	14		
Crucial (won't stay at motel/hotel without it)	2	0	3	9.18	.027
Total	100%	100%	100%		
FREE CONTINENTAL BREAKFAST	N=158	N=44	N=114		
Not at all important	66%	59%	68%		
Somewhat important	26	34	24		
Very important	7	7	7		
Crucial (won't stay at motel/hotel without it)	1	0	1	2.10	.552
Total	100%	100%	100%		
FOOD & BEVERAGE VENDING MACHINES	N=158	N=44	N=114		
Not at all important	36%	39%	35%		
Somewhat important	45	39	47		
Very important	17	18	17		
Crucial (won't stay at motel/hotel without it)	2	4	1	2.94	.401
Total	100%	100%	100%		

Table 7-7. Lodging preferences of winter travel parties in the central Upper Peninsula of Michigan[1] (continued).

HOTEL/MOTEL AMENITY	ALL TRAVEL PARTIES[2]	PURPOSE OF TRIP: "Business Only"	PURPOSE OF TRIP: Other Than "Business Only"	Chi Square	Significance
RESERVATIONS CAN BE MADE BY CALLING A TOLL-FREE "800" TELEPHONE NUMBER	N=158	N=44	N=114		
Not at all important	38%	39%	39%		
Somewhat important	36	36	36		
Very important	25	23	25		
Crucial (won't stay at motel/hotel without it)	1	2	0	2.69	.443
Total	100%	100%	100%		
STORAGE FACILITY FOR RECREATIONAL VEHICLE OR EQUIPMENT	N=153	N=41	N=112		
Not at all important	54%	78%	45%		
Somewhat important	25	17	29		
Very important	17	5	21		
Crucial (won't stay at motel/hotel without it)	4	0	5	14.84	.002
Total	100%	100%	100%		
REFRIGERATOR IN ROOM	N=155	N=43	N=112		
Not at all important	62%	70%	59%		
Somewhat important	27	28	27		
Very important	8	2	10		
Crucial (won't stay at motel/hotel without it)	3	0	4	4.75	.191
Total	100%	100%	100%		
KITCHENETTE (REFRIGERATOR, STOVE, UTENSILS, DISHES, ETC.) IN ROOM	N=157	N=43	N=114		
Not at all important	78%	88%	75%		
Somewhat important	16	12	17		
Very important	4	0	5		
Crucial (won't stay at motel/hotel without it)	2	0	3	4.84	.184
Total	100%	100%	100%		
COMBINATION BATHTUB/SHOWER IN ROOM	N=159	N=44	N=115		
Not at all important	7%	7%	7%		
Somewhat important	13	16	12		
Very important	47	39	50		
Crucial (won't stay at motel/hotel without it)	33	38	31	1.67	.644
Total	100%	100%	100%		

[1] Alger, Luce, and Schoolcraft counties.

[2] All travel parties that spent one or more nights in a motel or hotel on their trip.

SOURCE: Spotts, Daniel M. and Edward M. Mahoney. 1985. "Tri-County Tourism Research Project: Preliminary Results of Summer, Fall, and Winter Surveys." Department of Park and Recreation Resources, Michigan State University. East Lansing.

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CHAPTER 8

BED AND BREAKFAST ESTABLISHMENTS IN MICHIGAN

Edward M. Mahoney

Introduction

A Bed and Breakfast (B&B) is an establishment in which a home owner provides a place to sleep and a breakfast to travelers (Mathews, 1985). Hartzell (1982) defines a B&B as: ". . . overnight lodging in a private home, guest house, or country inn. It might be a charming old Victorian home, an elegant townhouse, house boat, or a room in a city apartment. Whatever the style, the big 'extra' is the personal touch."

There are generally two types of B&Bs: the B&B homestay and the B&B inn (Mathews, 1985). The B&B homestay, closely resembling the British B&B, is a private residence in which the owner rents extra bedrooms and provides breakfast to paying guests. It is typically a sideline business or hobby with greater emphasis on meeting people than on profits. The B&B inn, on the other hand, is usually a profit-oriented business consisting of a manager and staff. It usually offers more rooms and services than a B&B homestay, e.g., meals in addition to breakfast, and operates under state and local regulations for commercial eating and lodging establishments.

The roots of the B&B concept can be traced back centuries (Mathews, 1985). B&Bs have been popular in European countries since the 1600s. The modern American version of a B&B has emerged as a mixture of the British B&B, the United States' guest house or tourist home, the American farm vacation, and the New England country inn. Consequently, defining a present-day American B&B is difficult and confusing. Simpson (1983) calls it "Bed and Breakfast American Style." "American Style" refers to the great variety of circumstances and locations in which B&B accommodations may be found, including private homes, mansions, guest houses, farm houses, country and village inns (both B&B and full service), sea-side and mountain lodges, and small hotels.

The emergence of B&Bs is one of the most significant innovations in the style of travel in the United States since the post-World War II motel boom (Van Benthuysen, 1983). Since the mid-1970s when the British B&B concept was first introduced in the U.S. (Keister, 1984), dramatic growth has occurred in the number of B&Bs throughout the country.

In Michigan, the popularity of B&Bs both as a form of lodging and a business venture has increased significantly during the last decade. In 1984, 65 operating B&Bs were identified in Michigan. This increased to 110 in 1986, and in 1990 there were about 400 B&Bs in operation. Most B&Bs are located in the southwest and northwest regions of the state, but almost every region now has some B&Bs. The increased number of B&Bs in Michigan has given rise to more than five B&B reservation services, several new businesses which supply B&Bs with specialty products and services (e.g., food, legal advice), the publication of numerous directories and books about B&Bs, and the Lake-to-Lake Bed and Breakfast Association, a statewide organization with 200 members. The number of local and regional B&B leagues or associations has also grown. The Michigan Travel Bureau, the Lake-to-Lake Bed and Breakfast Association, and several regional tourist associations are cooperating with the industry to promote B&B stays. In 1987, a state law was passed which defined B&Bs and provided some regulatory relief.

Even with the growth in the popularity and number of B&Bs, a considerable lack of information and various misconceptions about B&Bs and B&B guests persist due to the relative newness of the B&B concept and the continued rapid growth in the number of B&Bs in Michigan. To help close some of these information gaps, this chapter presents descriptive information on Michigan B&Bs and their guests. It is based primarily on three studies conducted in Michigan in 1984 (Mahoney, 1986), 1986 (Mahoney, et. al., 1986), and 1988 (Mahoney, et. al., 1989).

Characteristics of B&Bs in Michigan

The 1984 and 1986 studies were conducted to determine the characteristics of Michigan B&Bs and to identify trends in the industry. Although the industry is still growing and changing rapidly, these studies provide the only baseline statistics available to monitor changes in the industry. In the 1984 study, questionnaires were sent to the owners/operators of the 65 B&Bs which could be identified, and 57 (81%) were returned. In 1986, 92 (83%) of the 110 B&Bs identified in a statewide inventory completed and returned a more comprehensive questionnaire. The survey instruments used in both studies included similar questions to facilitate comparisons and identify trends. A summary of the principal findings of both surveys follows.

Product Characteristics

Number of Rooms

The trend in Michigan since 1980 has been toward more smaller B&B homestays and fewer B&B inns. In 1986, B&Bs on the average had 5 rooms for rent, compared to 7 in 1984 (Table 8-1). This was due to the start-up of many smaller (3 or 4 room) B&Bs in 1985 and 1986. In 1984, about half of the B&Bs had six or more bedrooms. This decreased to 36% of B&Bs in 1986. About a third of the B&Bs operating in 1986 rented three or fewer rooms. This trend appears to be continuing since 54% of the Lake-to-Lake Bed and Breakfast Association's current members are 1-4 bedroom B&Bs.

Bathroom Facilities

In 1984, 35% of the B&Bs had only shared bathroom facilities; 39% had private bathrooms available for all guests (Table 8-1). The percentage of B&Bs with only shared bathrooms increased to 43% in 1986, largely because of the increased number of smaller B&B homestays. In many instances, it was not physically or economically feasible for the owners/operators of these smaller B&Bs to add private bathrooms to all of their guest rooms. In 1986, only 21% of the B&Bs had private bathrooms available to all of their guests; 36% had both private and shared bathrooms.

Type of Breakfast Served

Most B&Bs, both in 1984 and 1986, provided guests with a continental breakfast included in the room rate (Table 8-2). Only 19% of the B&Bs operating in 1986 served full breakfasts. The percentage of B&Bs offering a full breakfast declined between 1984 and 1986, partly because few, if any, of the (newer) smaller B&B homestays had the licensed food service facilities which in 1986 were legally required to serve full meals. Although the 1987 law significantly reduced the restrictions and requirements which had prevented B&Bs from

Table 8-1. Number of rooms for rent and bathroom arrangements in Michigan B&Bs.

	1986	1984
	----Percent of B&Bs----	
Number of rooms		
1	1	4
2	10	14
3	20	9
4	22	16
5	10	9
6-10	24	32
10+	12	18
Mean	5.4	7
Type of bathrooms		
Shared only	43	35
Private guest bathrooms only	21	26
Private and shared	36	39

Table 8-2. Type of breakfast served in Michigan B&Bs.

	1986	1984
	----Percent of B&Bs----	
Full breakfast	19	26
Continental breakfast	81	69
Would serve a full breakfast if allowed	46	N.A.

serving more complete breakfasts, the vast majority of B&Bs continued to provide only continental breakfasts.

Room Rates

The average price charged for rooms increased only slightly between 1984 and 1986 (Table 8-3). The average single occupancy (one person per room) rate increased from $41.50 in 1984 to $45.00 in 1986. Part of this increase resulted from the fact that in 1986 more B&Bs charged the same rate whether one or two people stayed in a room. In 1984, many offered lower single occupancy rates. The double occupancy rate, which is a more valid indicator of B&B prices, only increased from $49.50 to $51.00. The range of prices charged by B&Bs decreased between 1984 and 1986. In 1986, over three-quarters (77%) of the B&Bs had double occupancy rates of between $30 and $60, 6% charged less than $30, and 17% charged over $60.

Management Characteristics

Reasons for Opening a B&B

Restoring an historic building and obtaining supplemental income were common reasons for opening a B&B (Table 8-4). In the 1986 study, over a quarter (26%) of the B&B owners/hosts indicated that they opened a B&B primarily because it provided an opportunity to restore an historic building, and hopefully some remuneration. This is consistent with the findings of the 1984 study that the average age of B&B structures was 88 years and that the majority of B&Bs were located in older Victorian homes. Three-quarters of the B&Bs operating in 1984 were in buildings of national, state, or local historical significance. Over a quarter were in buildings that were either on the National Register of Historic Places or were owned or operated by persons seeking to obtain such designation.

Financial reasons, including supplemental income and/or tax benefits, were mentioned as reasons for opening a B&B by 28% of the owners in the 1986 study. Other reasons included the chance to be one's own boss, meet people, and their own experiences staying in B&Bs. It is clear that for many B&B hosts making a profit was not the primary, and rarely the sole objective for opening a B&B.

Time in Operation

Michigan's B&B industry is dominated, as it was in 1984 and 1986, by new start-ups. Almost half (47%) of the B&Bs in operation at the time of the 1986 survey opened after 1984; 29% had been in business twelve months or less (Table 8-5). Only 13% of the B&Bs operating in 1986 had been in business more than four years. At least 50% of the B&Bs now in operation have been in business three or fewer years.

Nearly all (94%) of the B&Bs operating in 1986 were startup businesses. Thus only 6% of the hosts/owners had purchased an existing B&B. Although the re-sale of existing B&Bs has increased since 1986, the vast majority of the B&Bs opened since 1986 have been new start-ups.

Table 8-3. Rates charged by Michigan B&Bs.

	Single Occupancy	Double Occupancy
	------Percent of Rooms------	
1986 Rates		
Under $30	14	6
$30-$40	37	36
$41-$50	28	24
$51-$60	8	17
$61-$70	6	7
$71-$80	3	6
$81-$90	2	2
$91+	2	2
	-----------Means---------	
1986	$45.00	$51.00
1984	$41.50	$49.50

Table 8-4. Primary reasons Michigan B&B owners/ operators opened their B&Bs (1986).

	Percent of B&Bs
To restore an historic building	26
Supplemental income	23
Enjoy meeting people	15
Self employment/own boss	15
Traveled/stayed in B&Bs	10
Tax purposes	5
Extra space in house	3
Other	3

Table 8-5. When Michigan B&Bs opened and number of months in operation (1986).

	Percent of B&Bs
Year first opened	
1980 or earlier	4
1981	4
1982	5
1983	15
1984	25
1985	20
1986	27
Number of months in operation	
1-6	24
7-12	5
13-18	18
19-24	10
25-36	21
37-48	10
49-60	4
61+	8
Mean	25

Reservation Policies

The majority (56%) of B&Bs in 1986 required all guests to make reservations, down slightly from 61% of the B&Bs operating in 1984 (Table 8-6). In part, this was because many of the newer B&Bs were having some difficulty attracting guests and rarely were fully booked. Over a third (35%) of B&Bs operating in 1986 required guests to pay for both Friday and Saturday nights on busy weekends, apparently because it is frequently difficult to find persons interested in a room for only one night on popular weekends.

Membership in B&B Leagues and Organizations

Over half (59%) of the B&Bs operating in 1984 belonged to a B&B league, association, and/or reservation service. Of the B&Bs operating in 1986, 35% belonged to some type of reservation service (Table 8-7). For some fee, either a percentage of the room rate, annual fee, or a combination thereof, reservation services promote their B&B members and take reservations. They will screen guests (e.g., to exclude smokers or children) and will book guests only for those dates which the host desires. Almost half (49%) of the B&Bs in 1986 belonged to a local, regional, statewide, or national B&B league or association, a percentage which has likely increased since 1986.

Other Management Characteristics

In 1986, the vast majority (86%) of B&B owners lived in the building where the B&B was located (Table 8-8). The remainder either employed innkeepers or provided guests with keys to buildings which did not have a live-in host. Meals were either brought in or guests were served at a nearby restaurant. In 1986 at least three B&Bs did not have live-in hosts and others were being planned.

Forty-one percent of the B&Bs operating in 1986 employed persons other than family members, compared to 46% in 1984 (Table 8-8). This slight decline again resulted from the relative increase in the number of smaller B&B homestays.

The percentage of B&Bs open year-round increased from 52% in 1984 to 71% in 1986, due in part to an increased number of B&Bs in non-traditional tourist areas (Table 8-8). In 1986, the year-round B&Bs were open an average of 350 days per year, while the seasonal B&Bs were open an average of 168 days per year, usually from May to September.

Characteristics and Behavior of Guests at Michigan B&Bs

The 1984 and 1986 studies did not provide information on the characteristics or behavior of persons staying at B&Bs in Michigan. This lack of demand-side information was discussed at several meetings of the Lake-to-Lake Bed and Breakfast Association during 1987 and 1988. As a result of these discussions, the Association's Board of Directors decided to cooperate with MSU in conducting a comprehensive study of persons staying at B&Bs throughout Michigan.

In April 1988, letters were sent to 229 Michigan B&Bs owners/operators which could be identified. The letter introduced the concept of a B&B guest study, described the study objectives, explained the owners'/operators' potential role in conducting the study, and inquired as to their willingness to participate in the study by distributing questionnaires to their guests. Of the 229 B&Bs contacted, 122 (53%) indicated their willingness to participate in the study and 108 (89%) actually did so.

Table 8-6. Reservation policies of Michigan B&Bs in 1986.

	Yes	No
	----Percent of B&Bs----	
Required reservations	56	44
Required guests to pay for Friday and Saturday nights on busy weekends	35	65

Table 8-7. Membership of Michigan B&Bs in reservation services and B&B organizations in 1986.

	Yes	No
	----Percent of B&Bs----	
Belonged to a B&B reservation service	35	65
Member of a B&B association or league	49	51

Table 8-8. Owner occupancy in Michigan B&Bs, employment of non-family members, and operating season.

	1986	1984
	----Percent of B&Bs----	
Owner/operator lived in building[1]	86	N.A.
Employed persons other than family members	41	46
Open year-round	71	52
Open seasonally	29	48

[1] Not asked in the 1984 survey.

The 108 participating B&Bs were divided into six regions and a sampling (questionnaire distribution) plan was developed for each region. Each sampling plan consisted of 25 randomly selected dates, including both weekend and week days. The six sampling plans ensured a representative set of questionnaire distribution dates within and across regions. B&B owners/operators were instructed to distribute a questionnaire to the first party registering on a given distribution date. Parties were not given more than one questionnaire per stay. If owners/operators had no guests registering on a distribution date they were instructed to give a questionnaire to the next party that registered.

Questionnaires were distributed between July 10, 1988 and November 27, 1988. A total of 1,140 (51%) of the 2,252 questionnaires which were distributed to guests were returned. This was considered a high response rate for a study involving self-administered questionnaires and no reminder contacts. A comparison of the registration dates on the returned questionnaires with the distribution dates assigned to the B&B owners/operators indicated a close adherence to the sampling plans.

First-Time Versus Repeat Guests

In the case of 37% of the B&B guests, the trip on which they received a questionnaire was the first time they had stayed in a B&B. These respondents are hereinafter termed "first-time guests." Sixty-three percent of the guests had stayed in a B&B prior to the trip on which they received a questionnaire. These respondents are hereinafter termed "repeat guests," even though two-thirds (67%) of them were staying in the B&B where they received a questionnaire for the first time.

Party Composition

The vast majority (70%) of B&B parties consisted of two persons. Only 8% were one person parties and only 5% consisted of five or more persons. Two-thirds (69%) of the parties consisted of all family members, usually a husband and wife (Table 8-9). Fourteen percent consisted of all friends and 7% consisted of both family and friends.

Half of the guests were between the ages of 25 and 44 (Table 8-10). Only 8% of the guests were 19 or younger, only 4% were under 10, and only 10% were 65 or older.

First-time parties generally consisted of more younger persons. Persons 20 to 34 comprised 37% of first-time parties, versus 28% of repeat parties. Similarly, persons 45 or older comprised 31% of first-time parties, versus 38% of repeat parties.

Personal Characteristics of Individual Respondents

Sixty percent of the respondents were Michigan residents (Table 8-11). The majority of nonresidents traveled from the bordering states of Illinois (13%), Ohio (4%), and Indiana (4%). The remaining 19% were from 30 other states.

Contrary to the opinion of some detractors of B&Bs, respondents were well-educated and had high family incomes (Table 8-12). Seventy-one percent had college degrees; 29% had some type of advanced degree. Over a third (34%) had gross family incomes of $60,000 or more, while only 19% had family incomes of less than $30,000.

Table 8-9. Composition of B&B guest parties.

	All Guests	First-Time Guests	Repeat Guests
	----------Percent of Parties----------		
Self	8	7	9
All family members	69	69	68
All friends	14	14	14
Family and friends	7	6	7
Business associates	2	3	1

Table 8-10. Age distribution of B&B guest parties.

Age Category	All Guests	First-Time Guests	Repeat Guests
	------------------Percent------------------		
Under 5	2	2	2
5 - 9	2	2	2
10 - 14	2	2	2
15 - 19	2	2	2
20 - 24	4	6	2
25 - 34	27	31	26
35 - 44	24	22	26
45 - 54	17	16	19
55 - 64	11	10	12
65 - 74	5	4	5
75 +	5	1	2

Table 8-11. Resident state and zip code region of B&B guests.

State/Zip Code Region		Percent
MICHIGAN		60
Royal Oak	(480,483)	19
Detroit	(481,482)	13
Flint	(484,485)	3
Saginaw	(486,487)	4
Lansing	(488,489)	6
Kalamazoo	(490,491)	5
Jackson	(492)	2
Grand Rapids	(493-495)	7
Traverse City	(496)	1
Gaylord	(497)	0
Iron Mountain	(498,499)	0
OTHER STATES		40
Ohio		4
Illinois		13
Indiana		4
Other states		19

Table 8-12. Socioeconomic characteristics of B&B guests.

	All Guests	First-Time Guests	Repeat Guests
	----------	Percent	----------
GENDER			
Female	63	63	63
Male	32	37	37
AGE			
Under 20	0	0	0
20 - 24	4	6	4
25 - 34	30	34	29
35 - 44	29	26	30
45 - 54	18	17	19
55 - 64	12	10	13
65 - 74	6	8	4
75 +	1	0	1
Mean	42	40.9	42.2
Median	40	38	40
MARITAL STATUS			
Single	22	23	22
Married	78	77	78
RETIRED	12	12	12
SPOUSE RETIRED	11	12	10
CHILDREN LIVING AT HOME	38	42	36
EDUCATION			
Elementary school	0	0	0
Some high school	0	1	0
High school diploma	8	13	5
Some college	20	23	18
College degree	30	30	30
Some graduate school	12	12	13
Advanced degree	29	22	34
GROSS FAMILY INCOME			
Under $20,000	6	11	3
$20,000 - $24,999	7	8	6
$25,000 - $29,999	6	8	5
$30,000 - $34,999	8	9	8
$35,000 - $39,999	7	6	7
$40,000 - $44,999	7	8	7
$45,000 - $49,999	8	7	9
$50,000 - $59,999	16	18	14
$60,000 - $74,999	13	12	14
$75,000 +	21	13	27

Repeat guests generally represented a somewhat narrower cross-section of the population than first-time guests. In particular, repeat guests had higher average education levels and family incomes than first-time guests. Over three quarters (77%) of the repeat guests had college degrees and 34% had advanced degrees, while 64% of the first-time guests had college degrees and 22% had advanced degrees. Twenty-seven percent of the repeat guests had family incomes of $75,000 or more, compared to only 13% of the first-time guests. Similarly, only 14% of the repeat guests had incomes of less than $30,000 compared to 27% of the first-time guests.

Selection and Reservation Behavior

Eighty-six percent of the guests selected the B&Bs before leaving home on their trips (Table 8-13). A high percentage (72%) also made reservations before leaving home. Only 5% selected the B&B en route and only 9% selected the B&B after arriving in the area. The selection and reservation behavior of first-time guests did not differ substantially from that of repeat guests.

Information Sources

Persons staying for the first time in the B&B where they received a questionnaire were queried about which information source(s) influenced their selection decision. *Their responses indicate that Michigan's Bed & Breakfast and Historic Inns* (Michigan Travel Bureau, n.d.) was used by 14% of the parties, other B&B directories or books were used by 10% of the parties, and family and friends living near the B&Bs or who had stayed in the B&Bs were used by 12% and 11% of the parties, respectively (Table 8-14).

First-time guests were more likely than repeat guests to rely on word-of-mouth information, including recommendations from family and friends living near the B&Bs (15%), family and friends who had stayed in the B&Bs (13%), and local businesses (7%). Repeat guests, on the other hand, were more apt than first-time guests to use various B&B directories and books (30%), especially *Michigan's Bed & Breakfast and Historic Inns* (17%).

Trip Purpose and Reason for Visiting Areas Where B&Bs Were Located

Vacation/pleasure was the primary trip purpose for the majority (57%) of the parties (Table 8-15). Only 11% of the parties were on business trips. Eight percent were celebrating an anniversary, 7% were visiting family or friends, and 4% were on a honeymoon. The primary purpose of the trips of first-time and repeat guests were very similar. Thirty-nine percent of the parties indicated that staying in a B&B was either their only (11%), or primary (28%) reason for visiting the areas in which the B&Bs were located (Table 8-16).

Length of Trips on Which B&Bs Stays Occurred and Length of B&B Stays

More than half (53%) of the parties were on trips of one or two nights (Table 8-17). About a third (32%) of the parties were on trips of four or more nights.

The average length of a trip on which a stay in a Michigan B&B occurred was 3.7 nights; the average stay in a B&B was 2 nights (Table 8-18). Over three-quarters (80%) of the parties spent one or two nights. Less than 10% of the parties spent four or more nights. More than half (59%) of the parties spent all their trip-nights in one B&B (Table 8-19). Only 16%

Table 8-13. Selection and reservation behavior of B&B guests.

	All Guests	First-Time Guests	Repeat Guests
	-----------Percent of Parties-----------		
Selected the B&B before leaving home	14	14	14
Selected the B&B and made a reservation before leaving home	72	69	74
Selected the B&B en route	3	4	3
Selected the B&B and made a reservation en route	2	1	2
Selected the B&B upon arrival in area	9	12	8

Table 8-14. Information sources which prompted first-time stays at a particular B&B.

Information Source	All Guests	First-Time Guests	Repeat Guests
	-----------Percent of Responses-----------		
Family and friends living near-by	12	15	9
Family and friends who had stayed in B&B	11	13	8
Michigan's Bed & Breakfast and Historic Inns	14	11	17
Other B&B directories/books	10	5	13
Recommendation from another B&B host/operator	6	4	8
Lake-to-Lake Bed and Breakfast Association brochure	4	2	2
B&B Reservation Service	0	2	1
B&Bs Brochure	5	4	5
Advertisement/story in magazine	4	4	4
Advertisement/story in newspaper	6	8	5
Recommendation from a local business	4	7	2
Local chamber of commerce	6	6	6
Others	17	18	20

NOTE: Results pertain only to respondents who stayed in a particular B&B for the first time.

Table 8-15. Primary purpose of B&B guests' trips.

Purpose	All Guests	First-Time Guests	Repeat Guests
	----------Percent of Parties----------		
Business	11	10	11
Vacation/pleasure	57	53	57
Visit family/friends	7	7	7
Honeymoon	4	7	2
Anniversary	8	9	7
Wedding or funeral	4	4	4
Festival/special event	4	5	3
Other	6	6	9

Table 8-16. Primary reasons B&B guests visited areas where B&Bs were located.

	All Guests	First-Time Guests	Repeat Guests
	----------Percent of Parties----------		
To stay in this B&B was only reason	11	14	9
To stay in B&B was primary but not only reason	28	25	30
To stay in this B&B was not primary reason	61	61	61

Table 8-17. Duration of trips on which B&B stays took place, stays at B&B where contacted, and stays at other B&Bs on B&B guests' trips.

	ALL GUESTS			FIRST-TIME GUESTS			REPEAT GUESTS		
No. Nights	Total Trip	At This B&B	At Other B&Bs	Total Trip	At This B&B	At Other B&Bs	Total Trip	At This B&B	At Other B&Bs
	----Percent of Parties----			----Percent of Parties----			----Percent of Parties----		
0	---	---	84	---	---	93	---	---	79
1	23	48	7	30	54	4	19	44	10
2	30	32	4	28	26	2	32	35	6
3	14	11	2	14	12	0	14	11	2
4	10	4	1	9	4	0	10	4	2
5	4	2	1	4	2	0	5	2	1
6	3	1	0	2	0	0	4	1	0
7+	15	2	0	14	2	0	16	3	1

Table 8-18. Location of nights on an average trip on which a B&B visit occurred.

	ALL GUESTS		FIRST-TIME GUESTS		REPEAT GUESTS	
Location of Nights Spent on Trip	Average No. Nights	Percent of Trip-Nights	Average No. Nights	Percent of Trip-Nights	Average No. Nights	Percent of Trip-Nights
	---Percent of Parties---		---Percent of Parties---		---Percent of Parties---	
B&B contacted in	2.1	57	1.9	54	2.2	56
Other B&Bs	0.3	8	0.1	3	0.5	13
Hotels/motels	0.6	16	0.6	17	0.7	18
Family and friends	0.5	14	0.5	14	0.4	10
Other lodging	0.2	6	0.4	11	0.1	2
Total	3.7	100	3.5	100	3.9	100

NOTE: Details may not add to totals due to rounding error.

Table 8-19. Distribution of nights on B&B guests' trips.

	All Guests	First-Time Guests	Repeat Guests
	Percent of Parties		
Stayed only at one B&B	59	62	57
Stayed at more than one B&B	16	7	21
Stayed at B&B(s) and hotels/motels	24	22	25
Stayed at B&B(s) and family/friends	14	14	14

stayed in more than one B&B on the trip. Almost a quarter (24%) stayed in both B&Bs and motels on their trips.

First-time guests on the average were on somewhat shorter trips (3.5 nights) than repeat guests (3.9 nights) (Table 8-18). Fifty-four percent of the first-time guests spent only one (trip) night in the B&B where they received a questionnaire (Table 8-17). First-time guests averaged 1.9 nights in the B&Bs where they received a questionnaire. Repeat guests were more likely to spend more than one night in B&Bs than first-time guests. Over half (56%) of the repeat guest spent multiple nights in the B&B; they averaged 2.2 (trip) nights in the B&B where they received a questionnaire (Table 8-18). Sixty-two percent of first-time guests spent all of their trip nights in one B&B; only 7% stayed at more than one B&B on the trips during which they received a questionnaire (Table 8-19). In contrast, 21% of the repeat guests stayed at more than one B&B on their trips (Table 8-19).

Expenditures

The estimated expenditures of B&B parties within 20 miles of the areas in which the B&Bs were located are presented in Table 8-20. The table shows average party spending per night and per trip across five categories: vehicle-related, e.g., gasoline, repairs; restaurants, bars, night clubs; grocery or convenience stores; shopping; and recreation/entertainment, e.g., charter fishing, plays. These results are likely to be somewhat conservative since the highest and lowest 2.5% of the data provided by respondents were trimmed to moderate the effects of extreme responses on the means.

B&B parties on the average spent $151.40 per stay ($72.10 per night) in or near communities where the B&Bs were located. This does not include what they spent in the B&Bs, e.g., room costs. Forty-four percent of the $151.40 was spent in local restaurants and 28% was spent in retail stores or shops.

The implications of these spending estimates are that a five-bedroom Michigan B&B operating year-round in 1988 with a 40% occupancy rate (730 room-nights) generated about $52,600 per year in direct local spending. Of this, about $23,300 was spent in restaurants and $14,600 in local retail stores and shops. Total guest spending in the area, including about $37,200 in B&B room revenues (assuming an average room rate of $51.00), was about $89,900.

Satisfaction with B&B Stays and Likelihood of Repeat Visits

The vast majority of both first-time and repeat guests were very satisfied with their B&B experiences (Table 8-21). On average, guests rated the B&Bs where they received a questionnaires 1.9 on a 10-point scale (1 being very satisfied and 10 very unsatisfied). Over half (58%) of the guests were very satisfied with the B&Bs. Ninety-two percent of the guests indicated that they would stay in the B&B again if they made a return trip to the area. Twenty-nine percent of the guests who indicated they probably would not stay again in the B&B where they received a questionnaire cited a desire for new B&B experiences as the reason rather than dissatisfaction with the B&B.

Frequency of Travel

Ninety-one percent of the guests had taken at least one overnight vacation trip during the previous year (Table 8-22). They averaged four vacations and 16 nights of vacation travel, or an average of four nights per trip. Sixty-two percent had taken three or more vacations.

Table 8-20. Average spending by B&B parties in the local communities where B&Bs were located.

Spending Category	Party/Trip	Party/Night
Vehicle-related	$ 13.10	$ 6.30
Restaurants	66.90	31.90
Groceries	8.70	4.10
Shopping	42.00	20.00
Recreation/entertainment	11.40	5.40
Other	9.50	4.50
Total	$151.40	$72.10

NOTE: These are conservative estimates of spending. The highest and lowest 2.5% of party spending estimates were trimmed. For example, 2.5% of the parties reported spending $300 or more in local restaurants with one party reporting $1,650 in restaurant spending. These were not included in the calculation of mean spending presented in the table. This reduced the estimate of mean spending by approximately $5.90. Although somewhat conservative the trimmed means are less influenced by low and high spending extremes.

Table 8-21. Level of satisfaction with stays in B&Bs, likelihood of repeat visits, and reasons B&B guests will not stay in the B&B again.

	All Guests	First-Time Guests	Repeat Guests
	----------------Percent---------------		
SATISFACTION WITH B&Bs			
1 (very satisfied)	58	61	56
2	19	19	19
3	12	11	13
4	3	3	3
5	2	1	2
6	1	2	1
7	2	1	3
8	1	2	1
9	1	0	1
10 (very unsatisfied)	0	0	0
Mean	1.9	1.8	2.1
Median	1	1	1
WILL YOU STAY IN THIS B&B IF IN THE AREA AGAIN			
Yes	92	92	92
No	8	8	8
REASONS RESPONDENTS WOULD NOT STAY IN THE B&B IF IN THE AREA AGAIN[1]			
Dissatisfied with service	32	37	29
Desire other B&B experiences	29	11	38
Needs repair/maintenance	11	11	12
Likely will not be in area again	8	4	10
Lack of privacy	6	15	2
Not clean	1	4	--
Lack of recreational facilities	1	--	2
Other	11	18	8

[1] Percent of guests who would not stay in the B&B again.

Table 8-22. Percentage of B&B guests who took overnight vacations the previous year, number of overnight vacation trips, and number of vacation nights (1987).

	SAMPLE AS A WHOLE		FIRST-TIME GUESTS		REPEAT GUESTS	
Vacation Trips/Nights	All	Those that took at least one vacation	All	Those that took at least one vacation	All	Those that took at least one vacation
NUMBER OF TRIPS						
0	9	---	12	---	7	---
1	10	11	12	14	8	8
2	19	21	20	23	19	20
3	18	20	16	18	20	21
4	13	14	11	13	14	15
5	10	11	10	11	10	11
6	4	5	4	4	5	5
7	3	3	3	4	2	2
8	2	3	2	2	3	3
9	1	1	1	1	1	1
10+	11	12	9	10	12	13
Mean	4.2	4.7	3.9	4.4	4.5	4.8
Median	3.0	2.8	3	4	3	4
NUMBER OF NIGHTS						
0	9	---	12	---	7	---
1 - 5	12	13	15	18	10	10
6 - 10	20	22	22	23	20	22
11 - 15	19	20	17	22	18	20
16 - 20	16	18	15	17	17	18
21 - 25	9	10	9	10	10	10
26 - 30	7	7	4	4	8	9
31+	8	9	6	6	9	10
Mean	16.0	17.5	14.3	16.3	17.1	18.3
Median	14.0	15.0	12.0		15.0	

Repeat guests generally engaged in more vacation and business travel than first-time guests. They were somewhat more likely to take overnight vacations and vacationed more nights per year than first-time guests (Table 8-22). Ninety-three percent of the repeat guests took at least one overnight vacation during the previous year, compared to 88% of the first-time guests. Moreover, repeat guests averaged 4.5 overnight vacations and 17.1 nights of vacation travel, whereas first-time guests averaged only 3.9 overnight vacations and 14.3 nights of vacation travel.

Twenty-nine percent of the guests regularly made overnight business trips (Table 8-23). About a third (36%) of the sample stayed in B&Bs while on business trips and 9% frequently did so.

Past Experiences With B&Bs

Repeat guests were questioned regarding the first year in which they stayed in a B&B, the location of their first B&B stay, the number of B&Bs they had patronized, and the number of nights they had spent in B&Bs during the previous year (1987). Their responses indicate that less than half (41%) had stayed in a B&B prior to 1985, 39% had their first B&B experience in Michigan, 13% had their first B&B experience in northeastern United States, and 20% had stayed in a B&B for the first time in England, Scotland, Ireland, or Europe (Table 8-24).

Half (52%) of the repeat guests had stayed in more than three B&Bs (Table 8-25). Nineteen percent had stayed in 10 or more B&Bs. Fifty-nine percent had stayed in a B&B during the previous year. Repeat guests averaged five nights in B&Bs during the previous year (Table 8-26). Thirty-seven percent stayed five or more nights in B&Bs; 13% spent 10 or more nights.

Preferences For and Willingness to Pay for Private Bathrooms

Respondents were queried about the importance they place on the availability of private versus shared bathrooms, since this is an issue of considerable debate among both existing and prospective B&B owners. Their responses indicate that over half (58%) of the guests had a private bathroom in the B&B where they received a questionnaire; 52% of these guests would not have stayed in the B&B if this would have meant sharing a bathroom. Two-thirds (67%) of the guests who shared a bathroom would have preferred a private bathroom, and over half (51%) indicated that they would have paid extra for a private bathroom (Table 8-27).

The availability of private bathrooms was generally more important to first-time guests than to repeat guests. Sixty-one percent of the first-time guests and 56% of the repeat guests had a room with a private bathroom in the B&B where they received a questionnaire. Sixty-one percent of these first-time guests would not have stayed in the B&B if private bathrooms had not been available, compared to only 47% of these repeat guests. Moreover, nearly three-quarters (73%) of the first-time guests who had a shared bathroom would have preferred a private bathroom, and over half (53%) would have paid extra for it.

Table 8-23. Overnight business trips made by B&B guests.

	All Guests	First-Time Guests	Repeat Guests
	---------------Percent---------------		
Regularly made overnight business trips	29	23	33
Stayed in B&Bs on overnight business trips			
Yes, frequently	9	---	9
Yes, sometimes	27	---	27
No	64	---	64

Table 8-24. First year in which guests stayed in a B&B and location of first B&B patronized.

	All Guests	Repeat Guests
	-------Percent-------	
YEAR FIRST PATRONIZED A B&B		
1970 or before	3	5
1971 - 1975	2	4
1976 - 1980	6	10
1981 - 1984	14	22
1985	7	11
1986	10	16
1987	11	18
1988	46	14
LOCATION OF FIRST B&B PATRONIZED		
United States		
Michigan		39
Northeast		13
North Central		9
South		5
West		8
Canada		6
Europe		4
England/Scotland/Ireland		16
Other		1

Table 8-25. Number of B&Bs guests had patronized.

Number of B&Bs	All Guests	Repeat Guests
	--------Percent--------	
1	46	13
2	13	21
3	9	15
4	6	10
5	5	8
6	4	7
7	2	3
8	2	4
9	1	1
10+	12	19

NOTE: Results include the B&B in which respondents received a questionnaire.

Table 8-26. Number of nights B&B guests had spent at B&Bs during the previous year.

No. Nights at B&Bs During Previous Year	Percent	
0	...[a]	(41)[b]
1	16	(9)
2	23	(13)
3	16	(9)
4	9	(5)
5	10	(6)
6	6	(4)
7	2	(2)
8	4	(2)
9	2	(1)
10+	13	(8)
Mean	4.8	2.8

[a] Does not include those who did not patronize a B&B in 1987.

[b] Includes those that did not patronize a B&B in 1987.

Table 8-27. B&B guests' preferences and willingness to pay for private bathrooms.

	All Guests	First-Time Guest	Repeat Guests
	---------------	Percent	---------------
Had a private bathroom	58	61	56
Would not have stayed in B&B if private bathrooms were not available[1]	52	61	47
Had shared bathroom(s)	42	39	44
Private bathrooms were not available[2]	71	75	69
Would have preferred a private bathroom if available[2]	67	73	64
Would have paid extra for a private bathroom if available[2]	51	53	49

[1] Results pertain to guests who had private bathrooms.

[2] Results pertain to guests who had shared bathrooms.

Conclusion

Michigan's B&B industry experienced dramatic growth during the 1980s, especially after 1986. This growth has been stimulated by a number of factors on both the demand and supply sides, including the increased popularity of B&Bs as an alternative form of lodging and business opportunity, the growth of travel and tourism, the relatively low cost associated with starting a B&B, and the greater availability of information on how to start a B&B.

The industry has changed considerably since the 1970s. There are more smaller (five or fewer bedrooms) B&Bs relative to the number of B&B inns which dominated the industry in the 1970s. A greater proportion of the state's B&Bs are operating year-round, even though attracting off-season business remains a problem for many. B&Bs owners/operators are also attracting more business travelers and are becoming more sophisticated marketers, especially in the area of cooperative promotions.

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CHAPTER 9

EATING AND DRINKING PLACES IN MICHIGAN

Daniel M. Spotts

Introduction

Eating and drinking places are an important component of Michigan's travel and tourism system. Restaurants obviously provide an essential service to travelers in the state, and dining in such establishments in many cases constitutes a recreational experience which helps to maintain high levels of satisfaction among travelers and encourages repeat visits. This chapter discusses the number and types of eating and drinking places in Michigan, trends and patterns in the employment supported by such establishments, and the characteristics and specialties of some of Michigan's distinguished restaurants.

Number and Types of Eating and Drinking Places in Michigan

Statistics from the Michigan Department of Public Health (MDPH) on the number of licensed food service establishments by county and type of establishment are presented in Table 9-1. As shown therein, a total of 34,240 such establishments were in operation in Michigan in 1989. However, 7,985 of these establishments were classified as churches, commissaries, or "other." If we exclude these establishments from the total we can conclude that in 1989 Michigan contained 26,255 licensed food service establishments which definitely served travelers. Of these 26,255 establishments, "table service" restaurants constituted the highest percentage (41%), followed by fast food businesses (34%), cafeterias (18%), and establishments classified as "bar only" (7%).

Similar statistics on the number of licensed food service establishments by county and class of establishment are presented in Table 9-2. Of the total licensed food service establishments in the state, 83% were classified by MDPH as "fixed/commissary," 15% as "vending," 2% as "mobile," and less than 1% as "transitory." "Mobile" and "transitory" are defined at the bottom of the table.

Employment in Eating and Drinking Places in Michigan

According to the U.S. Bureau of the Census, in 1988 that portion of the state's eating and drinking places industry (SIC 581) which paid Social Security (FICA) taxes consisted of 14,146 establishments, employed 238,573 persons, and disbursed an annual payroll of over $1.5 billion (Table 9-3).

During 1983 through 1988, the majority (53%-61%) of the establishments in this portion of the industry were relatively small operations employing less than ten persons (Table 9-3). However, establishments with larger staffs provided most of the employment and payroll in this portion of the industry. During 1983 through 1988, establishments with staffs of 20-99 persons employed most (64%-66%) of the employees and disbursed most (59%-66%) of the payroll in this portion of the industry (Tables 9-4 and 9-5).

According to the Michigan Employment Security Commission, the annual average number of jobs in Michigan's eating and drinking places industry (SIC 581) increased steadily from 1977 through 1979, fell through 1982, and then climbed again through 1988 (Table 23-7;

Table 9-1. Number of licensed food service establishments by Michigan county by type of establishment, 1989.

	TYPE OF ESTABLISHMENT							
COUNTY	Bar-Only	Cafe-teria	Fast Food	Table Service	Churches	Commis-sary	Other	Total
Alcona	7	9	7	31	1	0	3	58
Alger	12	5	2	39	0	0	1	59
Allegan	15	62	121	92	7	4	69	370
Alpena	15	22	32	50	0	0	22	141
Antrim	12	17	15	35	3	2	4	88
Arenac	5	5	13	33	0	0	14	70
Baraga	9	8	5	20	0	0	0	42
Barry	7	19	37	43	9	0	34	149
Bay	61	70	107	127	4	2	36	407
Benzie	10	7	14	31	1	0	1	64
Berrien	33	105	194	246	17	10	159	764
Branch	9	13	38	52	4	0	33	149
Calhoun	48	69	153	156	18	3	123	570
Cass	5	26	41	61	7	0	28	168
Charlevoix	5	21	29	53	8	1	9	126
Cheboygan	19	17	33	51	0	0	9	129
Chippewa	24	35	45	87	7	4	2	204
Clare	10	8	28	49	1	1	11	108
Clinton	6	32	22	69	11	2	14	156
Crawford	3	6	10	29	0	0	1	49
Delta	32	28	30	66	8	0	32	196
Dickinson	29	21	31	45	1	5	17	149
Eaton	16	58	69	74	22	3	42	284
Emmet	5	21	30	82	7	1	6	152
Genesee	101	217	491	390	65	17	221	1,502
Gladwin	7	8	17	35	1	0	8	76
Gogebic	28	19	10	57	1	5	1	121
Grand Traverse	8	35	105	96	0	6	43	293
Gratiot	9	29	22	51	6	1	21	139
Hillsdale	7	21	34	46	2	0	33	143
Houghton	33	35	25	63	8	0	5	169
Huron	21	31	35	71	8	2	22	190
Ingham	19	162	305	253	36	11	205	991
Ionia	9	36	49	64	4	0	25	187
Iosco	7	13	20	83	3	0	7	133
Iron	20	9	13	29	1	1	0	73
Isabella	7	36	42	54	0	2	17	158
Jackson	26	81	143	177	12	7	110	556
Kalamazoo	22	143	305	215	14	6	119	824
Kalkaska	2	8	4	22	5	0	3	44
Kent	93	154	394	437	3	33	797	1,911
Keweenaw	3	2	5	13	0	0	0	23
Lake	0	7	5	32	0	0	1	45

Lapeer	10	42	60	58	4	10	29	213
Leelanau	2	10	25	47	0	2	5	91
Lenawee	12	61	82	133	7	2	62	359
Livingston	3	42	85	111	6	7	56	310
Luce	6	9	4	18	0	0	0	37
Mackinac	11	17	20	80	3	1	0	132
Macomb	55	290	686	773	59	9	664	2,536
Manistee	7	12	53	37	7	0	6	122
Marquette	45	40	64	98	7	0	26	280
Mason	7	19	53	30	12	3	15	139
Mecosta	15	26	16	64	0	0	15	136
Menominee	20	18	11	48	10	0	18	125
Midland	10	53	65	50	5	8	28	219
Missaukee	6	6	13	12	0	0	1	38
Monroe	21	67	89	173	15	2	95	462
Montcalm	2	38	25	75	12	2	31	185
Montmorency	6	4	7	33	2	0	1	53
Muskegon	68	89	188	148	4	5	134	636
Newaygo	1	25	23	60	8	0	12	129
Oakland	72	551	1,235	1,096	75	11	930	3,970
Oceana	3	17	19	53	10	0	7	109
Ogemaw	7	8	18	38	4	0	3	78
Ontonagon	22	15	6	22	1	1	0	67
Osceola	0	15	10	38	0	1	9	73
Oscoda	4	4	10	25	2	1	0	46
Otsego	10	13	20	42	3	0	6	94
Ottawa	8	96	165	147	21	16	191	644
Presque Isle	17	6	10	32	6	0	1	72
Roscommon	10	11	30	62	6	0	0	119
Saginaw	41	129	186	272	15	5	122	770
Saint Clair	36	73	115	153	11	8	95	491
Saint Joseph	9	38	47	91	5	4	48	242
Sanilac	9	20	17	81	3	0	36	166
Schoolcraft	9	12	11	27	1	0	3	63
Shiawassee	19	41	40	60	5	0	37	202
Tuscola	11	33	25	74	7	3	18	171
Van Buren	21	29	56	94	9	13	37	259
Washtenaw	9	161	306	277	29	7	190	979
Wayne	368	791	1,811	2,299	177	53	1,577	7,076
Wexford	4	18	44	41	0	0	10	117
Total	1,815	4,679	8,880	10,881	856	303	6,826	34,240

NOTE: An establishment is a single physical location at which food is served. A private-sector establishment is not necessarily identical with a company, which may consist of one establishment or more.

SOURCE: Michigan Department of Public Health, Food Service Sanitation Section.

Table 9-2. Number of licensed food service establishments by Michigan county by class of establishment, 1989.

	CLASS OF ESTABLISHMENT					
COUNTY	Fixed/Commissary	Mobile	Vending	Transitory	Other	Total
Alcona	57	0	0	1	0	58
Alger	58	1	0	0	0	59
Allegan	311	11	48	0	0	370
Alpena	125	0	15	1	0	141
Antrim	87	2	0	0	0	89
Arenac	64	1	1	4	0	70
Baraga	42	0	0	0	0	42
Barry	123	2	17	7	0	149
Bay	368	2	33	4	0	407
Benzie	64	0	0	0	0	64
Berrien	606	8	141	9	0	764
Branch	134	0	14	1	0	149
Calhoun	455	3	107	5	0	570
Cass	140	0	28	0	0	168
Charlevoix	124	2	0	0	0	126
Cheboygan	125	0	4	0	0	129
Chippewa	200	4	0	0	0	204
Clare	106	1	1	0	0	108
Clinton	148	0	8	0	0	156
Crawford	49	0	0	0	0	49
Delta	169	9	18	0	0	196
Dickinson	134	4	12	0	0	150
Eaton	261	3	18	2	0	284
Emmet	149	2	0	1	0	152
Genesee	1,311	24	168	0	0	1,503
Gladwin	69	4	2	1	0	76
Gogebic	121	0	0	0	0	121
Grand Traverse	256	3	30	5	0	294
Gratiot	126	4	9	0	0	139
Hillsdale	119	0	23	1	0	143
Houghton	165	0	4	0	0	169
Huron	174	0	14	2	0	190
Ingham	817	11	161	2	0	991
Ionia	167	4	9	7	0	187
Iosco	130	1	0	2	0	133
Iron	73	0	0	0	0	73
Isabella	144	2	11	1	0	158
Jackson	460	18	78	0	0	556
Kalamazoo	701	4	117	2	0	824
Kalkaska	41	3	0	0	0	44
Kent	1,353	53	505	0	0	1,911
Keweenaw	23	0	0	0	0	23
Lake	43	1	0	1	0	45

Lapeer	186	6	18	4	0	214
Leelanau	90	0	1	0	0	91
Lenawee	305	6	48	0	0	359
Livingston	258	7	44	1	0	310
Luce	37	0	0	0	0	37
Mackinac	132	0	0	0	0	132
Macomb	1,901	13	621	1	0	2,536
Manistee	116	1	5	0	0	122
Marquette	265	0	15	0	0	280
Mason	126	3	10	0	0	139
Mecosta	126	4	4	2	0	136
Menominee	108	0	17	0	0	125
Midland	200	7	12	0	0	219
Missaukee	37	1	0	0	0	38
Monroe	394	4	56	8	0	462
Montcalm	171	4	10	0	0	185
Montmorency	53	0	0	0	0	53
Muskegon	497	8	123	8	0	636
Newaygo	124	1	3	1	0	129
Oakland	3,152	155	663	0	0	3,970
Oceana	104	1	3	1	0	109
Ogemaw	78	0	0	0	0	78
Ontonagon	67	0	0	0	0	67
Osceola	66	1	6	0	0	73
Oscoda	45	0	0	1	0	46
Otsego	93	0	0	1	0	94
Ottawa	476	9	159	1	0	645
Presque Isle	72	0	0	0	0	72
Roscommon	119	0	0	0	0	119
Saginaw	672	8	90	0	0	770
Saint Clair	398	7	86	0	0	491
Saint Joseph	200	3	39	0	0	242
Sanilac	141	2	23	0	0	166
Schoolcraft	61	0	2	0	0	63
Shiawassee	179	2	20	1	0	202
Tuscola	156	4	11	0	0	171
Van Buren	218	10	30	1	0	259
Washtenaw	811	11	158	0	0	980
Wayne	5,723	261	1,091	1	0	7,076
Wexford	106	4	8	0	0	118
Total	28,455	730	4,972	91	0	34,248

NOTE: An establishment is a single physical location at which food is served. A private-sector establishment is not necessarily identical with a company, which may consist of one establishment or more. "Transitory" establishments have refrigeration and other equipment found at fixed establishments. "Mobile" establishments have vehicles which lack refrigeration equipment and must regularly return to a commissary.

SOURCE: Michigan Department of Public Health, Food Service Sanitation Section.

Table 9-3. Selected economic characteristics of eating and drinking places (SIC 581) in Michigan, 1983-88.

Year	Number of employees for week including March 12	Annual payroll ($000)	Number of establishments	Percentage of establishments employing . . .						
				1-4 persons	5-9 persons	10-19 persons	20-49 persons	50-99 persons	100-249 persons	250+ persons
1983	180,817	1,068,118	13,290	42.9	17.7	17.2	16.7	5.1	0.4	0.0
1984	197,399	1,174,868	13,251	41.0	18.2	16.9	17.0	6.2	0.7	0.1
1985	211,009	1,292,672	13,368	39.3	17.5	17.6	17.7	7.1	0.8	0.1
1986	222,688	1,592,100	13,668	38.4	17.7	17.0	18.9	6.8	1.1	0.1
1987	238,528	1,595,465	14,415	37.5	17.3	17.4	19.3	7.4	1.0	0.0
1988	238,573	1,557,975	14,146	35.3	17.6	18.6	19.9	7.7	0.8	0.0

NOTE: Figures pertain only to establishments that paid Social Security (FICA) taxes.

SOURCE: U.S. Bureau of the Census. County Business Patterns: Michigan, annual. Table 1B.

Table 9-4. Distribution of employees of eating and drinking places (SIC 581) in Michigan by size of firm, 1983-88.

Year	Total no. employees for week including March 12	Percentage of employees working in establishments employing . . .							
		1-4 persons	5-9 persons	10-19 persons	20-49 persons	50-99 persons	100-249 persons	250-499 persons	500+ persons
1983	180,817	5.1	8.8	17.4	39.7	24.1	4.3	0.5	0.0
1984	197,399	4.5	8.2	15.6	37.0	26.7	6.3	1.6	0.0
1985	211,009	(D)	7.5	15.6	35.7	29.3	(D)	1.4	(D)
1986	222,688	3.6	7.3	14.8	36.5	27.6	8.6	(D)	(D)
1987	238,528	3.5	7.0	14.6	36.4	29.7	8.0	0.8	0.0
1988	238,573	3.5	7.0	15.4	36.4	30.1	6.7	0.9	0.0

NOTE: Figures pertain only to establishments that paid Social Security (FICA) taxes. (D) denotes figures withheld to avoid disclosure of operations of individual establishments.

SOURCE: U.S. Bureau of the Census. County Business Patterns: Michigan, annual. Table 1C.

Table 9-5. Distribution of statewide payroll of Michigan's eating and drinking places (SIC 581) by size of firm, 1983-88.

Year	Total annual payroll ($000)	Percentage of statewide payroll paid by establishments employing. . .							
		1-4 persons	5-9 persons	10-19 persons	20-49 persons	50-99 persons	100-249 persons	250-499 persons	500+ persons
1983	1,068,118	8.6	7.5	16.3	38.1	24.1	4.4	0.9	0.0
1984	1,174,868	7.9	7.7	14.8	35.9	25.6	6.1	2.0	0.0
1985	1,292,672	(D)	6.6	14.8	35.0	28.1	(D)	1.8	(D)
1986	1,592,100	6.6	5.6	12.2	43.0	22.9	7.6	(D)	(D)
1987	1,595,465	14.0	6.0	12.8	32.2	26.4	7.3	1.2	0.0
1988	1,557,975	7.2	6.3	14.5	35.1	29.0	6.6	1.3	0.0

NOTE: Figures pertain only to establishments that paid Social Security (FICA) taxes. (D) denotes figures withheld to avoid disclosure of operations of individual establishments.

SOURCE: U.S. Bureau of the Census. County Business Patterns: Michigan, annual. Table 1C.

page 469). This pattern, which also occurred in Michigan's lodging industry (Table 23-8; page 469), reflects the recession and recovery of the early 1980s.

Employment in the state's eating and drinking places exhibits some seasonal fluctuations, but these fluctuations have not been as dramatic or regular as in the lodging industry, presumably because summer tourists comprise a less significant portion of the eating and drinking places industry's market. During the period 1977-1988, relatively modest peaks in the number of jobs in Michigan's eating and drinking places occurred in June, August, or September (Table 23-7; page 469).

Distinguished Restaurants in Michigan

Restaurant Hospitality magazine annually conducts a nationwide survey of independent restaurants and reports on the characteristics of the 500 responding restaurants that had the highest total sales. The characteristics of the Michigan restaurants that were among the "top 500" respondents to the three most recent surveys are presented in Table 9-6. Zehnder's of Frankenmuth and the Frankenmuth Bavarian Inn consistently had the highest total sales of these Michigan restaurants.

Many other restaurants in Michigan are distinguished in ways other than total sales volume. For example, Jim's Tiffany Place in Lansing has won numerous awards for dining excellence, including Three Star recognition by *Mobile Travel Guide*, the Travel Holiday Award, recommendations by AAA, Weight Watchers, Signature, and *Gourmet* magazine, and testimonials by *Restaurant Business* and *Food Service Marketing* magazines as one of the "most prominent independent restaurants in America." Some of the other outstanding restaurants in Michigan are described in Winters and Winters (1987).

Certain restaurants in Michigan are also distinguished by the specialties they serve which season the travel experiences of visitors with a distinctly Michiganian flavor. In particular, Stern and Stern (1983) identified nine restaurants which in their judgment served "the best indigenous specialties" in Michigan and expressed "the culinary souls" of their respective regions:

--The Cherry Hut, Beulah (Cherry floats, sundaes, and pies).

--The Dearborn Inn, Dearborn ("Midwestern man food," planked steak, and Lake trout).

--Everett's Smoked Fish, Naubinway (Smoked salmon and menominee).

--Great Lakes Whitefish & Chips, Charlevoix (Whitefish and walleye).

--Juilleret's, Harbor Springs (Planked whitefish).

--Finlandia Restaurant, Marquette (Pasties).

--Lawry's Pasty Shop, Ishpeming (Pasties).

--London Chop House, Detroit (Perch and lamb).

--Mattie's Bar-B-Que, Detroit (Soul food and ribs).

Table 9-6. Characteristics of "top" independent restaurants in Michigan, 1987-89.

Restaurant	Total Sales (000)	Cost of Food Sales (%)	Cost of Beverage Sales (%)	Cost of Labor (%)	No. Employees	No. Dining Seats	Average Dinner Check
1988 Restaurant Hospitality Survey (1987 data)							
Zehnder's of Frankenmuth, Frankenmuth	$12,309	24.0	23.0	33.0	300	1,225	$12.00
Frankenmuth Bavarian Inn, Frankenmuth	10,800	21.0	25.0	38.0	375	1,200	9.00
Weber's, Ann Arbor	4,617	39.6	22.8	34.9	205	320	19.12
Shanty Creek, Bellaire	3,977	36.8	22.5	35.7	150	260	18.21
Sebastian's, Troy	3,000	33.0	30.0	31.0	102	236	29.00
The Ember's, Mt. Pleasant	2,557	36.0	25.0	29.0	90	224	18.45
Stafford's Pier Restaurant, Harbor Springs	2,247	44.5	27.8	36.6	62	250	23.50
DeLuca's Restaurant, Westland	1,945	34.0	25.0	27.0	53	280	7.50
Pietro's Ristorante & Pizzeria, Gr. Rapids	1,900	32.0	21.0	32.0	90	250	10.00
Key Largo Restaurant, Walled Lake	1,700	45.0	21.0	35.0	75	270	18.80
Mexican Fiesta, Dearborn Heights	1,639	33.0	3.0	29.0	43	220	8.65
Tin Lizzie, Belleville	1,580	37.6	26.8	26.2	45	160	11.35
The Garden Restaurant/Holiday Inn, Midland	1,520	40.6	27.5	34.2	64	140	11.60
The Red Bull, Ann Arbor	1,353	39.0	24.0	30.0	34	138	13.99
1989 Restaurant Hospitality Survey (1988 data)							
Zehnder's of Frankenmuth, Frankenmuth	$11,976	25.8	28.0	32.0	328	1,225	$ 9.38
Frankenmuth Bavarian Inn, Frankenmuth	6,623	21.0	30.0	--	370	1,200	11.00
Shanty Creek-Schuss Mtn. Resort, Bellaire	4,936	36.8	23.3	33.3	243	300	21.14
St. Clair Inn, St. Clair	4,724	32.7	25.9	20.4	98	270	12.57
Weber's Restaurant, Ann Arbor	4,656	40.1	23.1	35.7	205	320	19.56
Sebastian's, Troy	2,950	34.0	29.0	31.0	85	230	32.50
The Embers, Mt. Pleasant	2,737	37.0	25.0	29.0	90	224	19.76
Stafford's Pier Restaurant, Harbor Springs	2,331	39.0	26.3	32.0	57	220	22.00
The Garden Restaurant, Midland	2,273	39.9	24.1	39.4	90	140	12.82
Heatherfields, Bay City	2,250	32.1	21.3	33.2	91	160	18.75
Gilbert's Steak House, Jackson	2,211	40.0	23.5	25.0	60	318	20.00
DeLuca's Restaurant, Westland	2,060	35.3	--	27.0	50	280	7.10
Pietro's Ristorante & Pizzeria, Gr. Rapids	2,011	33.0	20.0	32.0	100	300	10.00
Key Largo Restaurant, Walled Lake	1,900	41.0	22.0	34.0	85	270	27.00
Benton Harbor Holiday Inn, Benton Harbor	1,882	34.0	26.0	36.0	57	165	9.85
The Poor House, Charlotte	1,700	41.0	22.0	40.0	55	180	12.50
Windmill Restaurant, Dimondale	1,400	31.0	N.A.	29.0	82	190	6.50
The Red Bull, Ann Arbor	1,371	38.0	23.0	31.0	35	138	13.96
The Fenton Hotel, Fenton	1,361	36.0	25.0	24.0	48	100	20.00
Point West Inn Resort, Macatawa	1,265	39.4	25.6	22.5	100	140	22.00
Mitchells Food & Spirits, Royal Oak	1,015	36.5	24.5	31.0	34	160	21.67
1990 Restaurant Hospitality Survey (1989 data)							
Zehnder's of Frankenmuth, Frankenmuth	$12,916	N.A.	N.A.	N.A.	315	1,300	$10.00
Frankenmuth Bavarian Inn, Frankenmuth	11,410	N.A.	N.A.	N.A.	450	1,200	9.63
Uptown, Madison Heights	2,900	N.A.	N.A.	N.A.	---	270	18.00
The Embers, Mt. Pleasant	2,696	N.A.	N.A.	N.A.	80	734	17.40
Heatherfields, Bay City	2,390	N.A.	N.A.	N.A.	70	750	16.50
The Garden Restaurant, Midland	2,386	N.A.	N.A.	N.A.	67	1,050	13.00
Pietro's Ristorante & Pizzeria, Gr. Rapids	2,200	N.A.	N.A.	N.A.	80	350	12.00
Key Largo Restaurant, Walled Lake	2,001	N.A.	N.A.	N.A.	90	270	17.70
Holiday Inn Restaurant, Benton Harbor	1,950	N.A.	N.A.	N.A.	55	590	12.09
Treasure Island, Saginaw	1,950	N.A.	N.A.	N.A.	42	700	20.00
Ernesto's, Plymouth	1,874	N.A.	N.A.	N.A.	40	450	19.00
Windmill Restaurant, Dimondale	1,800	N.A.	N.A.	N.A.	70	210	6.00
Sayfees, Grand Rapids	1,620	N.A.	N.A.	N.A.	31	240	29.80
Great American Pie, Livonia	1,600	N.A.	N.A.	N.A.	57	230	---
The Fenton Hotel, Fenton	1,567	N.A.	N.A.	N.A.	49	206	20.00
London Chop House, Detroit	1,507	N.A.	N.A.	N.A.	75	240	---

SOURCES: Bittinger, Janie and Katie Gill. 1988. "The Top 500 Restaurants." Restaurant Hospitality. 72(6):101-139.

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CHAPTER 10

THE INTERRELATIONS OF AGRICULTURE AND TOURISM IN MICHIGAN

Dennis B. Propst and Thomas E. Combrink

Introduction

What do a blueberry festival, farm markets, wagon rides, winery tours, dude ranches, farm vacations, picking your own fruit, and the International Cherry Pit Spitting Contest have in common? They are all examples of the meshing of two of the leading industries of many states: agriculture and tourism. Although on the surface the agriculture and tourism industries may appear distinct and unrelated, both depend directly on the wise use of natural resources, and portions of each depend on the other for success.

There is really nothing new about the interface between agriculture and tourism. People began buying farm products as part of recreational outings in the 1920s and 30s when Sunday drives into the country to buy fresh fruit and vegetables became part of American culture. Today there are many examples of successful agriculture/tourism enterprises in the United States. The wine industry's effective marketing of California's Napa Valley as a tourist destination annually generates $50 million in tourism sales and over 1,500 jobs in the tourism sector (Goldman, 1983). In Lancaster County, Pennsylvania the agricultural lifestyle of the predominantly Amish community attracts tourists who, in turn, provide a ready market for the sale of the community's farm products at a farmers' market (Hurd, 1987). In Michigan, many u-picks and farm markets cater to tourists. Winery and orchard tours and agriculturally-based events, such as the National Cherry Festival and the Holland Tulip Festival, further adorn Michigan's landscape and annually attract millions of visitors. Michigan's five-day Cherry Festival in Traverse City alone attracts a half million onlookers (Data Research Center, 1985).

Agriculture/tourism benefits both farmers and travelers. It benefits farmers by providing them with a large and relatively untapped market for their products. This is especially important in view of economic challenges facing small-scale farming operations. It also benefits farmers because it helps an increasingly urban population better understand rural America. Agriculture/tourism benefits travelers since purchasing and consuming agricultural products is a recreation activity in its own right. In addition, buying directly from the farmer enhances the travel experience by providing "local color." This interaction further serves travelers' nostalgic and educational interests in rural American farm life.

In Michigan the interface between agriculture and tourism has evolved for several reasons. First, Michigan is a major tourist destination because of its proximity to large populations centers and its extensive recreation and travel resources. Furthermore, Michigan is second only to California in the diversity of agricultural products grown. Such diversity makes Michigan a primary producer of many agricultural products, including blueberries, red tart cherries, apples, strawberries, maple syrup, and numerous vegetables (Michigan Department of Agriculture, 1986), and many of these products are of potential interest to travelers. This gives Michigan a competitive advantage over neighboring states that do not have as suitable a climate for the production of many agricultural products that travelers desire.

The potential demand for agriculture/tourism in Michigan is supported by several trends in society. First, fresh farm products are highly popular due to nationwide interest in nutrition, diet, and health. Second, trends in the direct marketing of agricultural products point to an increasing national demand for locally grown and fresh produce. Third, U.S. government surveys indicate that domestic recreational travel will continue to rise, with increasingly sophisticated tourists traveling close to home on shorter but more frequent "mini-vacations" in pursuit of diverse and high-quality experiences and authentic, locally-produced products. And finally, agriculture/tourism has strong backing from leaders in Michigan's food and agriculture industry, who consider it to be a needed growth area in the next century (Michigan Department of Agriculture and Futures Team 2020, 1990).

With the exception of research on farm vacations (Pizam and Pokela, 1980; Bevins and Hoffer, 1981) and a study of the potential for operating farm markets at service areas on the New York Thruway (Stuhmiller, et. al., 1976), the marketing and economic aspects of agriculture/tourism have not been the subject of scientific study. To shed some light on this phenomenon in Michigan, the Agricultural Experiment Station and the Cooperative Extension Service at MSU recently funded several studies to determine the potential for the direct marketing of agricultural products to tourists as a means of strengthening both the agriculture and tourism industries in Michigan. This chapter summarizes the findings of these studies. First, however, it is necessary to define several terms that have specific meanings throughout this chapter and to then describe the objectives of and methods employed in the studies mentioned above.

Definitions

1. Agricultural or farm products - locally produced fruits and vegetables, trees, fresh or smoked fish, livestock and livestock products, flowers, bedding plants, and processed products such as wine, maple syrup, apple cider, juices, jams, preserves, honey, and cheese.

2. Farm markets - businesses where individuals sell fresh agricultural products, usually but not always from their own farm. Not included are "transient" activities (i.e., selling from the back of a pickup truck).

3. Farmers' markets - central places where farmers gather at various times of the year (e.g., growing seasons) to sell their products. They are frequently set up under a large tent or more permanent roof-type structure. They may be privately operated or sponsored by a public entity such as a municipality.

4. U-pick operations - farms and orchards where people come to harvest their own fruits and vegetables. Often they are part of a larger wholesale-oriented farm, but size is extremely variable.

5. Agricultural festivals or events - activities that are related to a particular agricultural product, e.g., the Holland Tulip Festival, the Asparagus Festival, the National Blueberry Festival, and the National Cherry Festival.

6. Agriculture/tourism enterprise - those businesses and activities (e.g., festivals) that engage partly or wholly in the *direct sales* of agricultural products to tourists and other travelers, including agricultural festivals, wineries, farm markets, farmers' markets, fish retailers, cider mills, maple syrup farms, Christmas tree farms, and u-pick operations.

7. Direct marketing and sales - any direct transaction between farmers and consumers; the retail portion of a farm enterprise. Examples of direct marketing outlets in Michigan include farm markets, u-pick operations, farmers' markets, and wineries.

8. Tourist - someone traveling *for pleasure* who either stays away from home overnight or is on a day trip of 60 miles or more one-way from his/her residence.

9. Traveler - similar to "tourist" except that travel can be for any purpose (business, visiting family and friends, conventions, etc.) except commuting to and from work or school.

Objectives and Methods of Studies

The 1983 Study (Propst, Moncrief, and Young, 1984)

This study involved an inventory of agriculture/tourism enterprises in Michigan, two surveys of consumers, and a survey of agriculture/tourism business operators. Five types of agriculture/tourism enterprises were inventoried: agricultural festivals, farmers' markets, farm markets, u-pick operations, and wineries. The inventory data were collected on a county-by-county basis during the spring and summer of 1983 by surveying all county Extension directors in the state and consulting various publications of the Michigan Departments of Agriculture and Commerce. The consumer surveys involved interviewing travelers who were at one of the five types of agriculture/tourism enterprises (on-site visitors) and travelers who were visiting other public and private recreational facilities (off-site visitors).

For the on-site survey, personal interviews were conducted at 23 agriculture/tourism enterprises in 16 counties in Michigan's southern Lower Peninsula between July 16 and October 1, 1983. Over 1,300 people were contacted. Of these, 283 met the 60-mile or over criterion for being defined as a "traveler." Two hundred seventy-four individuals completed the 5 to 10 minute interview. Thirty-nine percent of the respondents were contacted at festivals, 17% at farm markets, 11% at u-picks, 16% at combination u-pick and farm markets, 7% at farmers' markets, and 9% at wineries. Interviews were conducted in four-hour blocks during mornings and afternoons on both weekdays and weekends. Ninety-three percent of the respondents were contacted on weekends.

The off-site survey involved adding questions on agriculture/tourism to three separate questionnaires developed and administered by other researchers in the MSU Department of Park and Recreation Resources in the course of their research on Michigan tourism during the summer of 1983. These studies involved contacting people who were visiting various tourist destinations in Michigan other than the five types of agriculture/tourism enterprises. In total, 2,226 Michigan travelers were interviewed at 12 state forest campgrounds, three Travel Information Centers, and numerous marinas, private campgrounds, beaches, and private attractions. The agriculture/tourism questions queried respondents about their awareness of Michigan agricultural products, whether they bought or planned to buy agricultural products outside a grocery or convenience store, and if so, how much they spent or planned to spend.

The business survey elicited information from agriculture/tourism business operators about the characteristics of their business (length of season, products sold, services provided, years of operation, employment structure, etc.), the number of travelers served, and the number of dollars generated by direct sales to travelers in 1983. A mail survey was conducted in early 1984 to obtain this information. Due to financial and time limitations, only farm markets, u-picks, and combination farm market/u-picks were surveyed. The sampling frame was all 976 Michigan farm market and u-pick operations obtained from the inventory and a mailing list maintained by the Michigan Department of Agriculture. This frame was first stratified according to six geographic regions and business types. Then, 300 businesses were randomly selected according to their proportional distributions within regions and counties. The achieved sample consisted of 209 businesses, a 70% response rate. Twenty-nine percent of these 209 businesses were u-picks, 32% were farm markets, and 39% were combination u-pick and farm market operations.

The 1985 Traveler Survey (Propst and Combrink, 1986; Combrink, 1987)

This survey sought to determine the level of travelers' interest in purchasing various agricultural products and services, and to identify barriers to the purchase of farm products and services by travelers. The determination of interest level helps to establish the size of the "available market" for the direct purchase of agricultural products (Kotler, 1988). Businesses or organizations must then decide which particular subset(s) of the available market (i.e., "targets") to pursue. The study involved personal interviews of 616 travelers contacted at 12 tourist destinations across the state.

The 1986 Business Monitor Study (Combrink and Propst, 1987)

This study sought to monitor the growth of Michigan's agriculture/tourism industry over time by tracking the quantity and types of products sold to travelers, the number of travelers who purchased agricultural products, employment in agriculture/tourism businesses, and agriculture/tourism business costs. The overall intention was to conduct a long-term evaluation of the industry to determine if product sales to travelers increased as a result of heightened state promotional activities and public awareness of agriculture/tourism businesses and activities. Thirty selected farm markets and u-picks constituted the initial sample. A mail questionnaire solicited information pertaining to the 1986 growing season from this panel. The goal for future years was to monitor similar business activity in other agriculture/tourism enterprises (fish retailers, wineries, etc.). However, elimination of funding prevented the realization of this goal. Thus, the results pertain to the business activity of 30 farm markets and u-picks during only one year.

The most important findings of the above studies are synthesized and discussed in the following paragraphs. The first section describes the numbers and characteristics of agriculture/tourism enterprises in Michigan, drawing on the results of the 1983 inventory of agriculture/tourism enterprises, the 1983 survey of agriculture/tourism businesses, and the 1986 business monitor study. This is followed by a discussion of the needs and behaviors of travelers as they relate to the purchase of agricultural products in Michigan, as revealed by the on-site and off-site surveys of travelers conducted in the 1983 study and the 1985 traveler survey.

Supply-side Aspects of Agriculture/Tourism in Michigan

Number of Enterprises

The 1983 inventory of agriculture/tourism enterprises identified 1,123 such enterprises in Michigan that year, as detailed below:

Farm markets	393
U-picks	298
Combination farm markets and u-picks	285
Farmers' markets	78
Wineries	15 (17 locations)
Agriculture-related festivals	54
Total	1,123

Other businesses or activities besides the five types inventoried in 1983 may have had an agriculture/tourism relationship, including fish retailers, county fairs, bedding plant producers, u-cut Christmas tree farms, horse shows, and cider mills. A very cursory examination suggested that there may have been an additional 500 of these other business and events with an agriculture/tourism connection, thus bringing the total number of agriculture/tourism enterprises in Michigan in 1983 to about 1,700.

The number of agriculture/tourism enterprises included in the inventory that were found in each of Michigan's counties is presented in Table 10-1 and portrayed graphically in Figure 10-1. From Figure 10-1 it is clear that southwest and southeast Michigan had the greatest number of u-picks, whereas southwest and west central Michigan led in farm markets and combination farm market/u-picks. The largest proportion of farmers' markets was in the southeast; most wineries were in the southwest and northern regions. Finally, the highest proportion of agricultural festivals were in the southeast and northern regions. Many agriculture/tourism businesses were located near Great Lake shorelines since the prevailing winds and rolling topography in such areas create ideal conditions for fruit trees. Because the Great Lakes also attract tourists, a majority of these businesses were located where they could capture a large portion of the tourist market. In particular, a large number of such operations were located in southwestern Michigan--a region that is readily accessible to a significant out-of-state market (Chicago) via interstate highways.

Characteristics of Agriculture/Tourism Businesses

Ninety-five percent of the businesses represented in the 1983 business survey were located on the farm, and these farms ranged in size from 5 to 1,400 acres. The average size was 162 acres. The average length of business operation was 16 years; the mode was 20 years.

Most operations had features that made them amenable to increased sales to travelers. First, in the 1983 survey the most frequently-cited reasons for direct marketing were enjoying people (71% of businesses surveyed) and the greater profitability of retailing compared to wholesaling (69%), both of which are essential for successful direct marketing to travelers. Second, in 1983 a tremendous variety of items were offered to customers, including processed, non-food, and fresh agricultural products. Third, the season during which most direct outlets were open coincided with the peak summer tourist season: 80% of the farm markets and u-picks surveyed in 1983 opened between May and August and 76% closed between September and December. However, the length of operation ranged from 13 to 365 days, and a few businesses indicated that they had more than one opening and closing date. Thus many businesses provided products that were available in different seasons, which helped to extend the time during which some type of farm product was available to tourists. Finally, the services provided by many farm markets and u-pick operations in 1983, whether by design or not, satisfied many traveler needs. For example, 69% provided containers for fruits and vegetables, 44% delivered products to customers' vehicles, 40% had restrooms, 23% provided picnic tables, and 21% offered tours. Also, the 1986 business monitor study found that some businesses offered seasonal attractions such as product festivals, chicken barbecues, tour packages, craft shows, and demonstrations. Moreover, 41% of the businesses surveyed in 1983 and 66% of the businesses surveyed in 1986 sold directly to travelers who arrived by tour bus.

Agricultural Products Sold

In the 1983 business survey operators were asked to list their top five selling products in terms of physical volume. The top ten products sold were apples (43% of the business), strawberries (28%), peaches (28%), corn (25%), tomatoes (21%), cider (20%), cherries (18%),

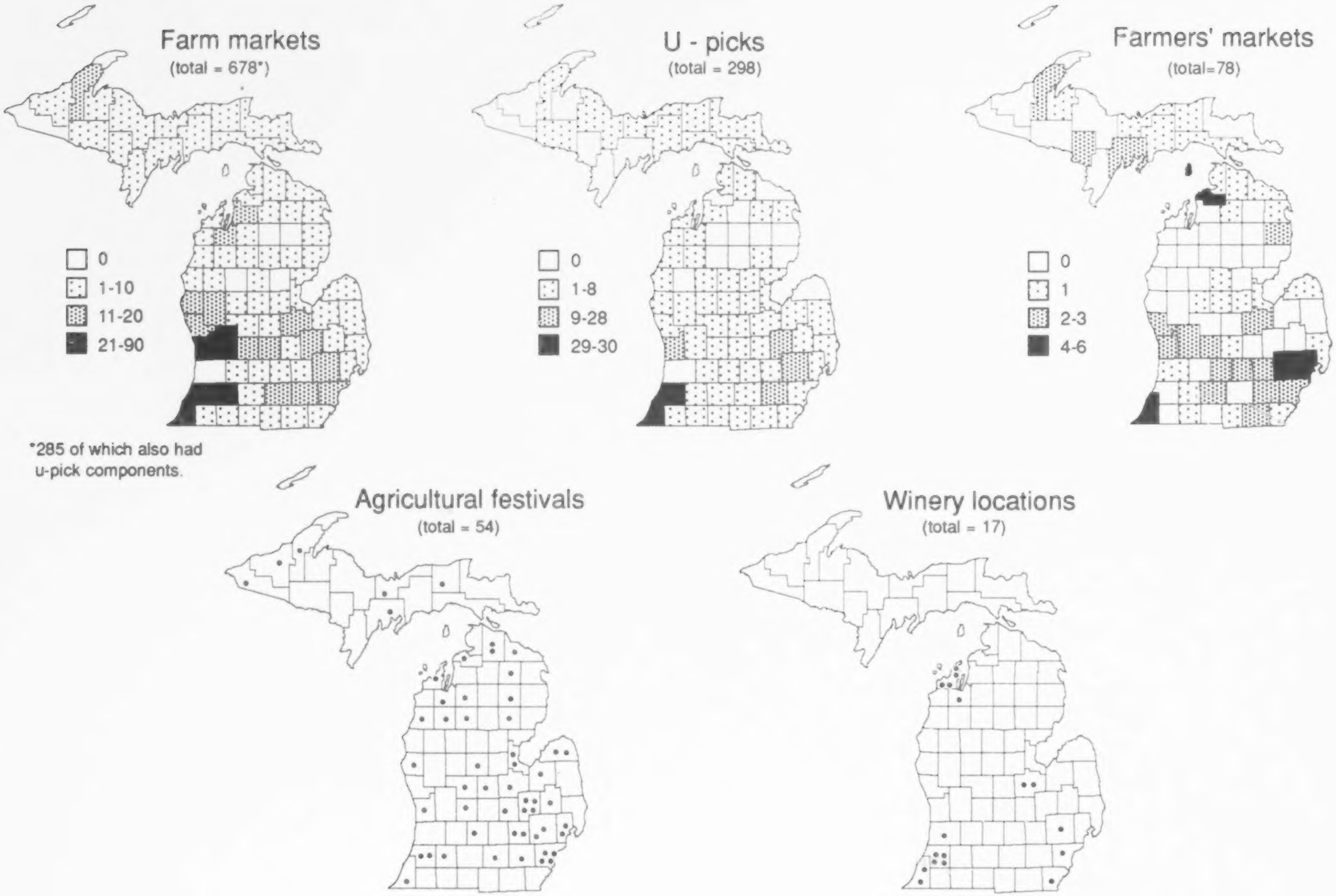
U-pick farms provide tourists with an opportunity to experience rural Michigan.

Table 10-1. Inventory of agriculture/tourism facilities by Michigan county, 1983.

County	Farm Markets	U-picks	U-picks/Farm Markets Combined	Farmers' Markets	Winery Locations	Agricultural Festivals
Alcona	0	0	2	2	0	0
Alger	2	2	1	1	0	1
Allegan	0	0	0	1	1	0
Alpena	3	1	5	1	0	0
Antrim	7	1	4	0	0	0
Arenac	3	1	0	0	0	0
Baraga	1	0	0	1	0	0
Barry	1	2	4	0	0	0
Bay	4	2	3	1	0	2
Benzie	6	3	3	0	0	0
Berrien	51	30	39	6	2	1
Branch	5	1	1	0	0	0
Calhoun	4	3	0	2	0	0
Cass	1	1	7	0	0	0
Charlevoix	8	0	2	5	0	1
Cheboygan	7	5	1	1	0	2
Chippewa	3	1	0	0	0	0
Clare	3	1	0	1	0	0
Clinton	4	1	7	1	0	0
Crawford	0	0	0	0	0	0
Delta	6	0	0	2	0	1
Dickinson	0	0	2	2	0	0
Eaton	3	6	4	2	0	1
Emmet	2	1	1	1	0	0
Genesee	10	13	9	0	0	4
Gladwin	0	1	0	0	0	0
Gogebic	0	0	0	0	0	1
Grand Traverse	9	1	4	0	1	1
Gratiot	1	1	2	0	0	1
Hillsdale	2	4	2	1	0	0
Houghton	7	4	4	3	0	1
Huron	1	0	2	1	0	2
Ingham	0	6	6	2	0	0
Ionia	15	1	4	2	0	1
Iosco	1	0	2	0	0	0
Iron	1	2	1	0	0	0
Isabella	1	2	4	1	0	1
Jackson	14	5	0	0	0	1
Kalamazoo	9	5	14	1	0	1
Kalkaska	5	0	0	0	0	1
Kent	18	4	6	2	0	0
Keweenaw	0	0	0	0	0	0
Lake	1	0	1	0	0	0

Lapeer	0	8	4	0	0	1
Leelanau	5	3	1	0	4	1
Lenawee	4	6	0	3	0	0
Livingston	6	6	3	2	0	2
Luce	1	4	0	1	0	1
Mackinac	2	1	0	1	0	0
Macomb	3	6	7	4	0	2
Manistee	8	2	2	0	0	1
Marquette	4	2	1	0	0	0
Mason	3	1	1	0	0	0
Mecosta	9	3	1	1	0	0
Menominee	1	0	0	0	0	0
Midland	4	4	0	1	0	0
Missaukee	1	0	0	0	0	1
Monroe	4	4	4	1	1	0
Montcalm	4	1	0	0	0	1
Montmorency	0	1	1	0	0	1
Muskegon	10	4	5	2	0	0
Newaygo	8	6	10	0	0	0
Oakland	10	15	1	4	1	2
Oceana	7	4	11	0	0	1
Ogemaw	2	7	1	0	0	1
Ontonagon	1	0	0	0	0	1
Osceola	0	1	0	0	0	0
Oscoda	0	0	0	0	0	1
Otsego	2	0	0	1	0	0
Ottawa	4	22	18	2	0	1
Presque Isle	1	0	0	1	0	1
Roscommon	0	0	1	0	0	0
Saginaw	0	1	20	2	2	1
Saint Clair	3	8	1	1	0	0
Saint Joseph	4	3	2	1	0	0
Sanilac	1	5	4	0	0	0
Schoolcraft	3	2	0	1	0	0
Shiawassee	6	5	1	0	0	1
Tuscola	1	2	5	0	0	1
Van Buren	36	29	16	0	4	2
Washtenaw	8	12	9	3	0	1
Wayne	6	8	7	3	1	4
Wexford	2	1	1	0	0	1
Total	393	298	285	78	17	54

SOURCE: Propst, Dennis B., Lewis W. Moncrief, and Charlotte Young. 1984. "The Relationship Between Agriculture and Tourism in Michigan." Department of Park and Recreation Resources, Michigan State University. East Lansing.


Farm markets
(total = 678*)
☐ 0
⬚ 1-10
▨ 11-20
■ 21-90
U - picks
(total = 298)
☐ 0
⬚ 1-8
▨ 9-28
■ 29-30
Farmers' markets
(total=78)
☐ 0
⬚ 1
▨ 2-3
■ 4-6
Agricultural festivals
(total = 54)
Winery locations
(total = 17)

*285 of which also had u-pick components.

Figure 10 - 1. Inventory of agriculture / tourism facilities by Michigan county, 1983.

raspberries (17%), blueberries (14%), and pears (13%).

Business Expenses

The 1986 business monitor study found that the average cost for the retail portion of a farm market or u-pick operation was $84,000 annually.

In the 1983 business survey, operators were asked to indicate the types of products and services (e.g., fertilizer, containers) they purchased to support the direct sales portion of their business, and where these purchases were made. Almost two-thirds (64%) of the respondents indicated they made their expenditures within the county where the business was located. Another 35% said their business expenditures occurred in Michigan, but outside the county of their location. Thus, 99% of the farm market and u-pick businesses in Michigan made businesses expenditures within the state. Consequently, since little leakage out of the state occurs initially, the potential for secondary economic impacts on jobs and incomes generated by additional rounds of business spending is high.

Eighty-nine percent of the respondents to the 1983 business survey advertised their products in 1983. Of those who advertised, an average of about 3% of their gross sales was spent on advertising (based on those respondents who said they were extremely or somewhat confident about their figures). Almost three-quarters (71%) of the businesses said they spent 5% or less of their gross sales on advertising. Six percent said they spent more than 10% of their gross sales on advertising. This same pattern existed in each of the state's Cooperative Extension regions.

Each business in the 1983 business survey used an average of three types of advertising media. Eighty-seven percent used newspapers, 78% used road signs, 33% used brochures and flyers, and 31% used radio. The majority of all types of advertising took place within 100 miles of the business location. Newspaper advertising and road signs occurred within an even tighter radius than brochures, flyers, and radio. Most newspaper and road sign advertising occurred within 30 miles of the business.

Employment

From an economic development perspective, it is useful to know the number and kinds of jobs supported by traveler spending at agriculture/tourism businesses. The 1983 business survey found that agriculture/tourism businesses employed an average of 1.17 full-time and 7.31 part-time employees. Multiplying these figures by the total number of u-picks and farm markets in Michigan yielded an estimate of 8,277 employees (976 times 1.17 plus 976 times 7.31). An estimated 2,000 of these employees, or 24% of the total, were dependent on sales to travelers. Compared to Michigan's $3 billion agriculture industry and 103,000 farm jobs, these sales and employment figures are relatively small and indicate that Michigan's agriculture/tourism industry at the time of the survey was in an embryonic state. Indeed, in 1983 the economic impact of the agriculture/tourism industry in Napa County, California alone (Goldman, 1983) was greater than the entire agriculture/tourism industry in Michigan.

The 1983 business survey revealed that employees were most commonly paid, part-time, non-family members. Specifically, 61% of the employees of farm markets, u-picks, and combination farm market/u-pick businesses were not part of the family. Of the remaining 39%, 44% of these family members were paid and 56% were not. Altogether 78% of all employees were paid and 22% were not. Eighty-six percent of all employees were part-time workers. The most common job types (paid or unpaid) at these businesses were fruit/vegetable pickers (72%), cashiers/clerks (66%), field workers (44%), supervisors/managers (40%), and maintenance workers (34%). Respondents to the 1986 business monitor study reported providing wages for an average of 2,763 hours of non-family employment per business.

The 1983 business survey revealed that if there were no direct sales to travelers, the employment category that would be most greatly affected would be "all salaried workers," which would suffer a decline of 24% or 333 fewer jobs. The categories least affected would be unsalaried workers (13% decline) and family workers (17% decline). All other categories would decline by roughly the overall average (23%) if there were no sales to travelers. Combination farm markets/u-pick businesses were least sensitive to the decrease in employee numbers when traveler sales were excluded (17% decrease for full-time employees and 20% decrease for part-time employees). U-pick part-time employee numbers would decrease the most (33%).

Sales of Agricultural Products to Travelers

Respondents to the 1983 business survey reported that an average of 33% of their direct-sales customers were travelers. The equivalent figure from the 1986 business monitor study was 25%. There was great variation across businesses on this variable. For example, in 1983 almost a third (31%) of the business operators indicated that between zero and 5% of their direct sales customers were travelers, while just over a quarter (26%) indicated that over half of their direct sales customers were travelers. There was regional variability as well. In 1983 operators in the southwest and northern regions reported relatively high proportions of travelers among their customers, while operators in the Upper Peninsula, east central, west central, and southeast regions of the state reported relatively low proportions.

Since not all enterprises kept accurate records of the number of their customers and their origins, respondents to the 1983 business survey who expressed little confidence in their estimates were excluded from the analysis. Based on the responses of those who were somewhat or extremely confident in their estimates, it was determined that travelers accounted for an average of 20-25% of the enterprises' gross sales (retail and wholesale) in 1983. The 1986 business monitor study found that travelers accounted for 30% of total retail sales. The range of traveler-to-total retail sales in the 1986 study was 0% to 90%, i.e., as much as 90% of a farm market's or u-pick's retail sales was provided by travelers.

Based on data from operators who expressed confidence in their figures, an estimated 323,000 travelers patronized the farm markets and u-picks in the 1983 sample and 126,000 travelers patronized the businesses in the 1986 sample. The average number of travelers per business in the 1983 and 1986 studies was 2,480 and 5,031, respectively. The discrepancy in these averages may have resulted from the fact that the 1986 study utilized a carefully selected panel that was known to cater to travelers, whereas the 1983 study was a general survey of all farm markets and u-picks. In 1983 agriculture/tourism businesses in southwest Michigan, an area which was actively promoting the sales of farm products to travelers, reported an average of 5,729 travelers per business, a value similar to that observed for the 1986 sample as a whole. This finding supports the rationale for the discrepancy between the 1983 and 1986 figures.

Despite the locations of most agriculture/tourism businesses near the Great Lakes and major highways, relatively few captured a significant portion of the traveler business. In 1983, only 17% of the farm markets and u-picks captured 93% of the travelers. Eight businesses alone accounted for 57% of the traveling customers. Sixty percent of the businesses surveyed were patronized by less than 300 travelers in 1983; a few had about 100,000 travelers.

Thus agriculture/tourism businesses and activities apparently were not being fully utilized by travelers.

In the 1986 business monitor study, farm markets and u-picks reported sales of $800,000 to 126,000 travelers, or an average of $6.35 per person. The 1983 on-site survey of customers similarly found that travelers contacted at farm markets or u-picks on the average spent $7.36 per person on farm products. Expanding the 1983 average of 2,480 travelers per farm market or u-pick business to the total number of such businesses shown in Table 10-1 yields an estimate of 2.42 million travelers who purchased products at such places in 1983. Multiplying this figure by the range of average spending per traveler at such businesses ($6.35 to $7.36) yields an estimate of $15.4 to $17.8 million in direct sales to travelers patronizing these establishments, or 20% to 23% of the $75.9 million in total direct farm sales in Michigan (Henderson and Linstrom, 1980).

Demand-side Aspects of Agriculture/Tourism in Michigan

Demand and Potential Demand for Agricultural Products

As indicated above, an estimated 2.42 million travelers patronized farm markets and u-pick operations during the summer of 1983. This, however, is only a small percentage of total Michigan travelers. The on-site customer survey revealed that only 22% of the over 1,300 individuals contacted at various on-site locations in 1983 were travelers. Pelsue (1980) similarly found that only 14% of the consumers at Vermont farm markets were on vacation and an additional 10% were nonresident second home owners.

A clearer indication of the public's interest in purchasing agricultural products on their travels in Michigan emerged by examining the percentage of all travelers that purchased agricultural products as opposed to those contacted at agriculture/tourism sites alone. The 1983 off-site surveys revealed that only 10% of the 2,226 travelers had bought or planned to buy farm products from direct outlets. Moreover, state forest campers that did buy farm products from direct outlets spent an average of less than $1 for such products per party per trip.

The clearest indication of travelers' interest in buying agricultural products on their travels in Michigan emerged from the 1985 traveler survey. The latter revealed that, depending on the attraction where interviews took place, 21% to 77% of the travelers reported buying agricultural products on their trip. The average was 40% of travelers buying farm products, a fourfold increase over the 1983 off-site results. The reason for this apparent discrepancy is unknown but believed to be a combination of differences in sampling techniques and the increased statewide promotion that agriculturally-based tourism received between 1983 and 1985.

Propst and Combrink (1986:17) concluded that it was most reasonable to assume that the percentage of travelers purchasing farm products doubled to 20% between 1983 and 1985 rather than increasing fourfold. This 20% of travelers in Michigan represents the estimated penetrated market for farm products and means that the remaining 80% of travelers is an untapped pool of potential customers. How many of this 80% would buy Michigan farm products from direct outlets? To begin answering this question, the 1985 sample of travelers was asked to express their interest in purchasing 62 different farm products and services. Evaluating consumer interest in this manner establishes the "potential market" for a given product or service (Kotler, 1988).

Travelers expressed the highest level of interest in purchasing corn, cherries, blueberries, strawberries, peaches, and apples (Table 10-2). Interest was lowest for flowers and plants, such as shrubs, trees, and bedding plants. Only 4% of the sample said they were not interested in any farm products.

Knowing how many potential customers are interested in a product does not necessarily indicate how many will buy that product. Certain real and perceived "barriers" may prevent the potential from being realized. To learn more about such barriers, travelers were presented with a list of possible barriers and asked to indicate which may prevent them from purchasing Michigan agricultural products. The most frequently cited reasons were that agricultural products were purchased at grocery stores, that products would spoil before reaching home, that there was no room in the vehicle, that prices were too high, and that products were not in season (Table 10-3). Many of these and other reasons given were knowledge and image barriers. Some of these may be overcome fairly easily at the individual business level and some will require long-term cooperation between the public and private sectors. For example, individual businesses may overcome some perceived barriers by developing promotional materials which stress the advantages of buying directly from the farm, describing ways to reduce spoilage, and emphasizing that small quantities of all products may be purchased. However, increasing travelers' awareness of the seasonal availability of various products and the locations at which certain products can be bought call for cooperative efforts between businesses and governmental units. A positive sign is that only 9% of the sample expressed uncertainty about product quality, only 5% cited lack of time, and only 2% expressed disinterest.

Characteristics and Behavior of Travelers Who Purchased Agricultural Products

In the 1983 on-site survey, over half (52%) of the 274 respondents were Michigan residents; the remainder resided in a variety of locations outside of Michigan. Thirty-five percent of the respondents were male, in contradiction of the stereotype that only housewives shop at direct market outlets. The average age was 45. Twenty-nine percent were college graduates and an additional 36% had at least some college education. The above suggests that these travelers were a well-educated, mature group of consumers.

Trip Characteristics

In the 1983 on-site survey, the highest proportion of travelers (40%) stated that the purpose of their trip was "vacation"; 14% said combination vacation and another purpose; 17% said visiting family and friends; 10% said buying agricultural products outside a grocery or convenience store; and 5% said business. Sixty-three percent planned to stay at least one night away from home within 30 miles of where they were interviewed. The average length of stay in the area was five nights, suggesting some potential for repeat business during the same trip.

Communication Preferences

In the 1983 on-site survey, over half (51%) of the travelers said that they first learned about a particular agricultural business or event through informal (i.e., word-of-mouth) channels. These informal channels included another person in the group, family members, friends, and "used to live here." Formal channels (radio, TV, newspapers, chamber of commerce, etc.) were used by 17% of the respondents. A third large category of response for first learning about a direct farm product outlet was road signs (21%). These results suggest that agriculture/tourism businesses interested in attracting more travelers should attempt to

Table 10-2. Agricultural products and services in which travelers in Michigan expressed an interest in purchasing.

Product/Service	Percentage Interested (N=614)	Product/Service	Percentage Interested (N=614)
Corn	57	Cherries (red tart)	21
Cherries	56	Melons (other)	21
Blueberries	48	Apricots	20
Strawberries	48	Beans (green)	18
Peaches	47	Cottage cheese	18
Apples	46	Vacation farms	18
Eggs	42	Egg plant	18
Raspberries	42	Rural bed & breakfast	18
Lettuce	41	Squash	17
Jams/jellies/preserves	38	Pumpkin	17
Cantaloupe	36	Firewood	16
Cider	35	Zucchini	15
Cheese	35	Spinach	14
Wine	34	Rhubarb	13
Maple syrup	34	Mushrooms (not wild)	12
Fruit juice	34	Beans (other)	11
Tomatoes	33	Flowers (cut)	10
Milk	33	Forestry museums	10
Potatoes	32	Sugar beets	10
Carrots	31	Farm tours	9
Nectarines	30	Peppers (other)	8
Honey	30	Forestry plant tours	8
Fish (smoked)	29	Farm product processing plant tours	8
Melons (water)	29	Shrubs	7
Cucumbers	28	Trees	7
Winery tours	28	Flowers (dug)	7
Broccoli	27	Mint	6
Plums	26	Turnips	6
Fish (fresh)	25	Water cress	6
Cauliflower	24	Bedding plants	6
Peppers (green)	21	Other herbs	4

SOURCE: Propst, Dennis B. and Thomas E. Combrink. 1986. "The Available Tourist Market for the Direct Purchase of Agricultural Products in Michigan." Final Report: Part II. Submitted to Agricultural Experiment Station and Cooperative Extension Service, Michigan State University. Department of Park and Recreation Resources, Michigan State University. East Lansing.

Table 10-3. Reasons for not purchasing Michigan agricultural products cited by travelers in Michigan.

	Percentage Citing (N=607)
Buy these products at grocery stores	50
Products will spoil before I reach home	38
No room in the vehicle	37
Prices are too high	34
Products not in season	33
Can get all I need near home	28
Didn't know these products were available	23
Don't know where to buy these products	22
Having to buy in too large a quantity	17
Don't know when to buy these products	16
Unsure of product quality	9
Not enough time on this trip	5
Just not interested	2

NOTE: Figures add to more than 100% due to multiple responses.

SOURCE: Propst, Dennis B. and Thomas E. Combrink. 1986. "The Available Tourist Market for the Direct Purchase of Agricultural Products in Michigan." Final Report: Part II. Submitted to Agricultural Experiment Station and Cooperative Extension Service, Michigan State University. Department of Park and Recreation Resources, Michigan State University. East Lansing.

develop an effective informal communication system. The formal, mass media channels through which most agriculture/tourism businesses sought to promote their products to potential customers were rarely used by travelers. Road signs were effective *once travelers were near the business or event*. Informal sources were much more powerful than road signs in attracting travelers from greater distances.

In the 1983 on-site survey, 61% of the respondents were repeat customers. This suggests a high degree of customer loyalty. Furthermore, these repeat customers can be an excellent source of word-of-mouth advertising. In addition, first time customers should be encouraged to return and spread positive messages to their friends and relatives. Specific techniques for developing an effective word-of-mouth communication system are described in McDonough and Ackert (1986a; 1986b).

Awareness of Agricultural Products

To determine travelers' awareness of agricultural products produced in Michigan, respondents to the 1983 on-site survey were asked to name any five of Michigan's agricultural products. Of 75 Michigan products grown or produced for direct consumption, the same 10 products were named repeatedly by a large proportion (42%) of the travelers. Sixty-three percent of the sample named apples and 62% named corn. Other frequently mentioned products were: peaches (48%), cherries (35%), blueberries (33%), potatoes (29%), tomatoes (25%), grapes (22%), dry beans (16%), and strawberries (12%). Twenty-nine products were never named. Over half of the 1,389 off-site travelers interviewed at marinas, private campgrounds, motels, and attractions in 1983 could not name five agricultural products produced in Michigan. Similar results emerged from the 1985 traveler survey. These findings indicate that travelers were generally unaware of the diversity of Michigan's agricultural products. Apparently these products may not have as distinct or widespread an image as California wine, Florida citrus, or Vermont maple syrup, and special efforts by the state's agriculture/tourism industry may be necessary to increase public awareness of farm products produced in Michigan.

Agricultural Products Purchased by Travelers

The types of products purchased by respondents to the 1983 on-site survey and the 1985 traveler survey are compared in Table 10-4. In the 1983 survey, travelers bought 50 separate farm products. Twenty-one percent of the sample purchased corn and 18% purchased peaches. Other frequently-purchased products included blueberries (15%), tomatoes (15%), apples (13%), melons (13%), and cherries (9%).

Those interviewed at tourist destinations in 1985 showed a somewhat different purchase pattern. A much higher percentage of travelers purchased cherries in 1985 than in 1983 (33% vs. 9% respectively). This difference may have partially resulted from the fact that 12% of the 1985 sample was interviewed at the National Cherry Festival in Traverse City, where cherries and cherry products were widely available. Furthermore, in 1983 all interviewing occurred after strawberry season. Thus, strawberries appeared among the top five products purchased in the 1985 study, but did not appear at all in the 1983 results. Similarly, fresh and smoked fish appeared high in the list in 1985 but not at all in the 1983 list because the types of businesses where travelers were interviewed in 1983 did not sell fish. Also note in the 1983 results the relatively high proportion in the "other" category (21%). The latter represents a wide variety of products, most of which were baked goods (e.g., donuts) and non-Michigan produce (e.g., bananas, oranges). Again, this difference can partially be explained by variations in study design. In 1983, travelers at agriculture/tourism businesses were allowed to

Table 10-4. Agricultural products most frequently purchased by travelers in Michigan.

TRAVELERS CONTACTED AT AGRICULTURE/TOURISM SITES IN 1983[1]		TRAVELERS CONTACTED AT GENERAL TOURISM SITES IN 1985[2]			
Product	Percentage That Purchased Product (N=165)	Product	Percentage That Purchased Product (N=281)[3]	Product	Percentage That Purchased Product (N=281)[3]
Corn	21	Cherries	33	Pumpkins	1
Peaches	18	Corn	17	Green Peppers	1
Blueberries	15	Strawberries	13	Milk	1
Tomatoes	15	Apples	12	Lima Beans	1
Apples	13	Wine	10	Cucumbers	1
Other melons	13	Escarole	8	Squash	1
Cherries	9	Peaches	8	Juices	1
Watermelon	7	Fresh fish	8	Blueberries	1
Wine	7	Smoked fish	6	Cantaloupe	1
Onions	7	Tomatoes	6	Mint	1
Cantaloupe	6	Potatoes	5	Navy Beans	1
Juices	6	Cheese	5	Eggs	1
Lettuce	5	Raspberries	3	Jams	1
Grapes	5	Lettuce	3	Plums	1
Raspberries	4	Zucchini	3	Fruit	1
Plums	4	Asparagus	2	Cut flowers	1
Nectarines	4	Melons	2	Black Turtle Beans	<1
Other	21	Cider	2	Apricots	<1
		Beans	2	Wheat	<1
		Jellies	2	Beer	<1
		Maple Syrup	2	Nectarines	<1
		Green Beans	2	Dairy products	<1
		Bedding plants	2	Dill Weed	<1
		Onions	2	Other	6
		Honey	2		
		Grapes	2	Did not list products purchased	6
		Watermelon	1		

[1] SOURCE: Propst, Dennis B., Lewis W. Moncrief, and Charlotte Young. 1984. "The Relationship Between Agriculture and Tourism in Michigan." Department of Park and Recreation Resources, Michigan State University. East Lansing.

[2] SOURCE: Propst, Dennis B. and Thomas E. Combrink. 1986. "The Available Tourist Market for the Direct Purchase of Agricultural Products in Michigan." Final Report: Part II. Submitted to Agricultural Experiment Station and Cooperative Extension Service, Michigan State University. Department of Park and Recreation Resources, Michigan State University. East Lansing.

[3] Percentages are based on the 46% of the total sample of 616 travelers who said they purchased agricultural products "on this trip."

list any products purchased, whereas in the 1985 survey respondents were encouraged to focus primarily on agricultural products. Therefore, the two panels of Table 10-4 are not directly comparable due to variations in study design and interview locations. Despite these differences it is clear from both studies that travelers most frequently purchased cherries, corn, strawberries, apples, blueberries, tomatoes, wine, peaches, and fish.

Spending on Agricultural Products

In the 1983 on-site survey, travelers on the average spent $5.58 on farm products. However, expenditures varied widely depending on the type of enterprise at which respondents were contacted. While an average of $7.30 were spent at combination u-picks/farm markets and an average of $8.75 were spent at farmers' markets, an average of $13.10 and $12.09 were spent at u-picks and wineries, respectively, and an average of only $0.71 were spent at agricultural festivals. Spending at wineries was dominated by relatively few travelers making fairly large purchases. Spending on farm products at agricultural festivals was typically low due to the unavailability of such products.

Travelers contacted in the 1985 traveler survey on the average spent $14.22 per person on farm products. However, the majority of spending was concentrated in either the $2-5 or the $6-10 range (28% and 34% of travelers, respectively).

Conclusions

Small-scale American farmers often find it difficult to survive in traditional wholesale marketing alone. In Michigan, the reduction in farm population, farm income, and the number of farms support this contention (Berman, 1983; U.S. Bureau of the Census, 1982). Furthermore, a growing non-farm population may possess misconceptions and misunderstandings which contribute to adverse decisions regarding agriculture and food production (Mawby, 1984). The direct marketing and sales of farm products to travelers may be one way to alleviate some of these economic pressures and educational gaps. Tourist-minded farmers in Great Britain have enjoyed the advantages of this form of marketing for many years. With its diversity of outlets where tourists can buy farm products, Michigan could enjoy similar advantages.

There is potential for growth in Michigan's agriculture/tourism industry. As the research results summarized in this chapter indicate, only a handful of direct market outlets were capturing the bulk of traveler business. Thus, more agriculture/tourism enterprises could successfully attract unexploited tourism segments.

Traveler interest in purchasing many farm products was high. However, before this interest can be translated into actual sales certain barriers must first be overcome. Lack of knowledge is one such barrier. Travelers often possessed erroneous perceptions of farm products and simply did not know what, when, and where fresh products were available. To begin to overcome this barrier, businesses must stress in their promotional materials the advantages of buying directly from the farm, ways to reduce spoilage on long trips, and the availability of small quantities of all products. An effective way to communicate this knowledge is through the informal but powerful word-of-mouth networks that exist among travelers. Overcoming knowledge and other barriers will also require more cooperation than currently exists among farming, travel and tourism, and commerce-related agencies and organizations.

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CHAPTER 11

SECOND HOMES AND OTHER TEMPORARY RESIDENCES IN MICHIGAN

Daniel M. Spotts

Introduction

Some of the recreation and travel that takes place in Michigan involves the use of some kind of temporary residence, such as a second home or a rented cabin, cottage, or condominium. The U.S. Travel Data Center estimated that 9% of all trips to and through Michigan in 1983-84 involved the use of an owned or rented cabin, condominium, or vacation home (Table 3-2; page 25). Similarly, Ross Roy, Inc. found that 17% of the *pleasure* trips to Michigan taken by households in the Great Lakes region involved the use of an owned or rented "cabin/cottage" (Table 3-4; page 33). Surveys of specific types of recreationists have found that 25% of Michigan's urban residents who had taken overnight ski trips stayed at an owned second home while on such trips (Stynes and Mahoney, 1980:4), that 6% of charter boat customers on overnight trips had stayed at a "second home/cottage" (Mahoney, Brunke, and Pistis, 1986), that 24% of the registered boats in Michigan were stored at a second home, and that 30% of the registered boat owners in the state also owned a second home (Stynes and Safronoff, 1982:52).

These results indicate that second homes and other temporary residences are by no means the type of lodging most frequently used by travelers in Michigan. However, the development and use of second homes and other temporary residences in Michigan have significant social, economic, and environmental impacts which have become increasingly controversial in recent years. It is therefore important to understand something about the number of such dwellings, the people who build and use them, and the resulting benefits and costs to society. Unfortunately, developing such an understanding is greatly hampered by a lack of current and objective information. No surveys of second home owners or renters in Michigan have been conducted recently. And at this writing statistics from the 1990 U.S. Census of Housing on the number of such dwellings by county and state are not yet available. Therefore, the same statistics from the 1960 and 1980 Censuses of Housing that were published in the first edition of this book are presented below. These statistics document the number of second homes and other temporary residences in Michigan versus other states in 1980, the spatial distribution of these dwellings in Michigan in 1980, and changes that occurred between 1960 and 1980 in the number of these dwellings in Michigan and other states.

Definitional Difficulties

Ideally one should study the second homes that people own, and the cabins, cottages, and condominiums that people rent, as two distinct phenomena. Unfortunately, the only comprehensive source of statistics on temporary residences of any kind--the U.S. Bureau of the Census--includes both types of housing units in the same category labelled "vacant seasonal and migratory" in its published reports. The Bureau defines "vacant seasonal and migratory" units as vacant units held for migratory farm laborers during the crop season, and vacant units "intended for occupancy during only certain seasons of the year," including units "intended for recreational use, such as beach cottages and hunting cabins; units offered to vacationers in the summer for summer sports or in the winter for winter sports; and vacant units held for herders and loggers" (U.S. Bureau of the Census, 1983:B-3).[1] The numerous cabins, cottages, and condominiums for rent in Michigan are included in this category. Hotels, motels, and dwellings with communal dining facilities are not included.

The only other category in the Census of Housing that contains relevant statistics is labelled "vacant year-round--held for occasional use." This category includes "vacant year-round units which are held for weekend or other occasional use throughout the year," including shared-ownership or time-sharing condominiums (U.S. Bureau of the Census, 1983:B-3). Units located in urban areas and units not used for recreational purposes are included in this category. The category by itself does not provide a sufficiently comprehensive measure of temporary residences since it excludes strictly seasonal housing units such as hunting cabins, ski lodges, and beach cottages. The "vacant seasonal and migratory" category alone is likewise an inadequate measure of temporary residences since it does not include housing units such as a condominium in Charlevoix used year-round for recreation on weekends. Indeed, the Census Bureau itself states that second homes may fall into either category (U.S. Bureau of the Census, 1983:B-3).

Since "vacant seasonal and migratory" units and units classified as "vacant year-round--held for occasional use" are each by themselves inadequate measures of temporary residences, the most reasonable way to enumerate these housing units is to add together the statistics in the two categories. This was the approach used in this study. The sum of the statistics in the two categories represents second homes in either rural or urban areas used for either recreational or nonrecreational purposes, rented cabins, cottages, and condominiums, and units held for loggers, herders, and migratory farm workers. Because more than owned second homes in the traditional sense of the term are included in this measure, the more comprehensive term "temporary residence" is used as a descriptor of the above types of housing units. "Temporary residences" as thus defined certainly include a diverse array of housing units, but all such units nevertheless have the common denominator of being a home away from home that is associated with some people's travel experiences. Indeed, units located in urban areas, although inconsistent with some individuals' conception of a second home, may generate a significant amount of travel, particularly in sunbelt states. In general, the disadvantage of ambiguity in the definition is counterbalanced to some extent by the advantage of comprehensiveness. Furthermore, units held for loggers, herders, and migratory farm workers are so few in number that their inclusion in the statistics is inconsequential. In 1970 there were only 54,122 such units in the U.S., or only 3.0% of the temporary residences in the U.S.[2]

A National Perspective

The number of temporary residences in each state in 1960, 1970, and 1980 is shown in Table 11-1. In 1980 Michigan had 215,958 temporary residences, or 6.0% of the total housing units in the state. Michigan had more temporary residences in 1980 than any other state except Florida. In general, the states with the most temporary residences, including Michigan, were heavily populated and had abundant recreation resources. States with large populations but less abundant recreation resources, such as Ohio and Illinois, had fewer temporary residences.

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[1] The Census Bureau classifies a housing unit as vacant if no one is living in it at the time of enumeration, or if all persons staying in the unit at the time of enumeration have their ususal place of residence elsewhere (U.S. Bureau of the Census, 1983:B-3).

[2] Source: U.S. Bureau of the Census. "1970 Census of Housing, Second Count, Table 29." An analogous figure for 1980 is not available.

Table 11-1. Number of second homes and other temporary residences by state: 1960, 1970, and 1980.

STATE	1980 RANK	NUMBER OF SECOND HOMES AND OTHER TEMPORARY RESIDENCES			PERCENT CHANGE		
		April 1960	April 1970	April 1980	1960-1970	1970-1980	1960-1980
Florida	1	73,926	84,205	304,607	13.9	261.7	312.0
Michigan	2	170,932	177,879	215,958	4.1	21.4	26.3
New York	3	247,977	204,586	215,920	-17.5	5.5	-12.9
California	4	128,870	128,738	181,620	-0.1	41.1	40.9
Texas	5	107,159	112,481	154,974	5.0	37.8	44.6
Wisconsin	6	88,130	71,380	140,401	-19.0	96.7	59.3
Pennsylvania	7	85,116	82,707	125,052	-2.8	51.2	46.9
New Jersey	8	122,152	106,892	105,825	-12.5	-1.0	-13.4
Minnesota	9	77,627	64,458	97,753	-17.0	51.7	25.9
North Carolina	10	36,583	36,491	84,233	-0.3	130.8	130.3
Massachusetts	11	87,019	65,813	81,955	-24.4	24.5	-5.8
Maine	12	64,718	66,648	79,876	3.0	19.8	23.4
Arizona	13	17,323	14,723	66,498	-15.0	351.7	283.9
Washington	14	42,372	29,257	56,304	-31.0	92.4	32.9
Missouri	15	37,125	20,296	53,371	-45.3	163.0	43.8
Colorado	16	28,690	22,258	48,116	-22.4	116.2	67.7
New Hampshire	17	33,882	36,991	45,884	9.2	24.0	35.4
Ohio	18	41,790	38,440	45,195	-8.0	17.6	8.1
South Carolina	19	21,189	19,063	43,992	-10.0	130.8	107.6
Indiana	20	39,780	36,090	41,727	-9.3	15.6	4.9
Virginia	21	23,770	27,835	39,589	17.1	42.2	66.6
Vermont	22	18,171	18,464	34,279	1.6	85.7	88.6
Maryland	23	24,996	22,642	34,269	-9.4	51.4	37.1
Illinois	24	37,424	31,623	31,610	-15.5	0.0	-15.5
Georgia	25	23,337	16,443	31,025	-29.5	88.7	32.9
Alabama	26	21,680	18,883	30,283	-12.9	60.4	39.7
Oregon	27	23,612	15,672	30,237	-33.6	92.9	28.1
Louisiana	28	22,114	13,586	29,750	-38.6	119.3	34.5
New Mexico	29	10,110	8,518	24,069	-15.7	182.6	138.1
Idaho	30	14,837	9,636	22,737	-35.1	136.0	53.2
Kentucky	31	17,087	19,845	22,288	16.1	12.3	30.4
Tennessee	32	17,073	12,743	21,676	-25.4	70.1	27.0
Arkansas	33	22,309	10,963	20,965	-50.9	91.2	-6.0
Connecticut	34	31,550	19,705	20,696	-37.5	5.0	-34.4
Oklahoma	35	18,670	9,517	20,265	-49.0	112.9	8.5
Mississippi	36	18,243	10,940	20,036	-40.0	83.1	9.8
Montana	37	14,091	9,705	19,046	-31.1	96.2	35.2
West Virginia	38	13,909	11,980	18,923	-13.9	58.0	36.0
Delaware	39	6,429	6,763	16,243	5.2	140.2	152.7
Iowa	40	18,129	13,086	15,803	-27.8	20.8	-12.8
Utah	41	5,518	5,237	12,602	-5.1	140.6	128.4
Rhode Island	42	14,521	11,663	12,057	-19.7	3.4	-17.0
Alaska	43	4,157	4,858	11,996	16.9	146.9	188.6
South Dakota	44	8,102	5,915	10,706	-27.0	81.0	32.1
Nebraska	45	10,003	5,957	10,623	-40.4	78.3	6.2
Kansas	46	12,100	5,862	10,272	-51.6	75.2	-15.1
North Dakota	47	7,395	5,966	9,353	-19.3	56.8	26.5
Wyoming	48	6,545	3,450	8,567	-47.3	148.3	30.9
Nevada	49	2,573	2,659	7,494	3.2	181.8	190.9
Hawaii	50	2,960	2,137	6,431	-27.8	200.9	117.3
District of Columbia	51	610	1,052	903	72.5	-14.2	48.0
Total		2,024,391	1,782,683	2,794,054	-11.9	56.7	38.0

NOTE: Number of second homes and other temporary residences was computed by combining the Census of Housing categories, "Vacant seasonal and migratory" and "Vacant year-round--held for occasional use."

SOURCES: U.S. Department of Commerce, Bureau of the Census: (1) *U.S. Census of Housing, 1960. Volume I, States and Small Areas. Part 1, United States Summary*. Washington, D.C.: U.S. Government Printing Office, 1963, Table 3. (2) *U.S. Census of Housing, 1970. General Housing Characteristics, Final Report HC(1)-A1, United States Summary*. Washington, D.C.: U.S. Government Printing Office, 1971, Table 3. (3) *U.S. Census of Housing, 1980*. *Volume 1, Characteristics of Housing Units, Chapter A, General Housing Characteristics. Part 1, United States Summary, HC80-1-A1*. Washington, D.C.: U.S. Government Printing Office, 1983, Table 71.

Between 1960 and 1980 the number of temporary residences in Michigan grew 26%. Most of this growth was during the 1970s. Wisconsin experienced a higher rate of growth between 1960 and 1980, Minnesota experienced an equivalent rate of growth, and Ohio, Indiana, and Illinois experienced little or no growth. Southern and western states, particularly Florida, Arizona, Alaska, and Nevada, experienced far higher growth than Michigan during these two decades. In fact, Michigan's growth rate of 26% for the period 1960-1980 was actually lower than the overall U.S. growth rate of 38%. In absolute numbers, however, the number of temporary residences added in Michigan between 1960 and 1980 (45,026) was only slightly less than the number added in Arizona (49,175) during this period. On the other hand, the number of owned units versus rental units added in the two states may have been quite different.

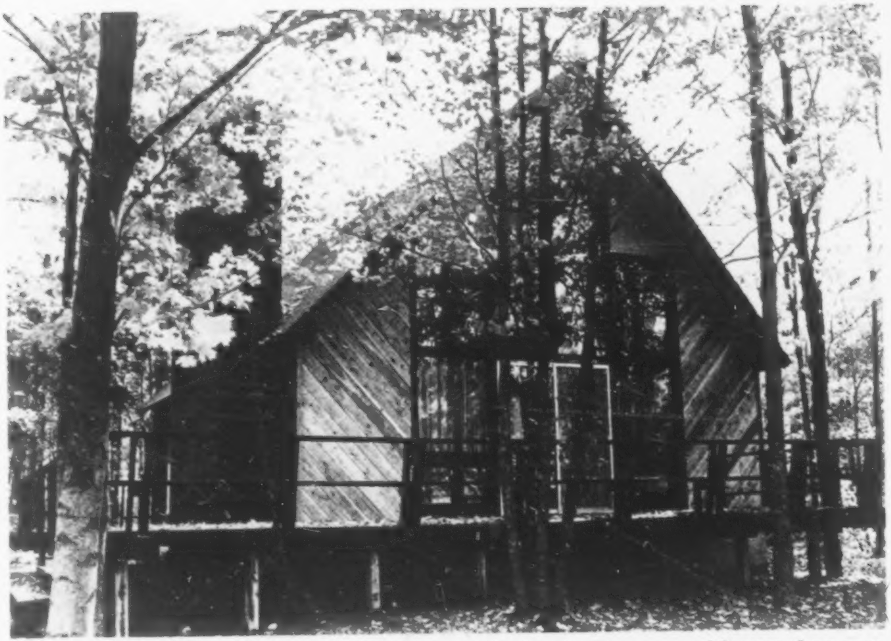
Second Homes and Other Temporary Residences in Michigan's Counties

The number of temporary residences in each of Michigan's counties in 1960 and 1980 is shown in Table 11-2. Figures 11-1, 11-2, and 11-3 are based on selected statistics from this table. Figure 11-1 shows that certain inland counties had the most temporary residences in 1980. Roscommon County led the state in number of temporary residences, followed by Clare and Lake Counties. These three counties also experienced the largest increase in absolute numbers of temporary residences between 1960 and 1980. Each of these counties added more than 3,800 temporary residences during this period. The large number of temporary residences in Roscommon County is probably related to its accessibility to urban areas via I-75 and U.S. 23 and to its two large inland lakes. Other counties with numerous temporary residences include Berrien, Newaygo, Gladwin, and a cluster of counties in northeast lower Michigan. The Upper Peninsula had only 30,315 temporary residences in 1980, or only 14% of the statewide total.

The counties that experienced the highest growth in number of temporary residences between 1960 and 1980 on a percentage basis were also inland counties (Figure 11-2). During this period the number of temporary residences in Crawford and Oscoda counties more than tripled. Menominee, Schoolcraft, Missaukee, Lake, Osceola, and Clare Counties also experienced high growth rates. Inland counties may have experienced greater growth than coastal counties in both absolute numbers and on a percentage basis because coastal property may have been largely "locked up" by 1960.

Between 1960 and 1980 decreases in the number of temporary residences occurred in the case of 27 counties. Some of these decreases could have resulted from the conversion of temporary residences to permanent residences as well as from the razing of temporary residences.

The proportion of all housing units in a given county that were temporary residences in 1980 is shown in Figure 11-3. Temporary residences constituted one sixth or more of the total housing units in a given county only in northern Michigan, i.e., north of the demarcation between the largely agricultural land of southern Michigan and the generally forested land of Michigan's north country. Temporary residences constituted over half of the total housing units in Lake, Oscoda, Roscommon, Montmorency, Alcona, and Keweenaw Counties, a higher proportion than in any other counties. These counties were capable of housing large numbers of temporary residents vis-a-vis the size of their resident populations. Within northern Michigan, the relatively more populated counties of Marquette, Menominee, Delta, Alpena, Grand Traverse, and Wexford were among the counties with the lowest proportions of temporary residences.



In 1980 Michigan had more second homes and other temporary residences than any other state except Florida.

Table 11-2. Number of second homes and other temporary residences by Michigan county, 1960 and 1980.

COUNTY	1980 RANK	NO. SECOND HOMES AND OTHER TEMPORARY RESIDENCES[1]		NET CHANGE 1960-1980	PERCENT CHANGE 1960-1980	1980 PERCENTAGE OF TOTAL HOUSING UNITS IN COUNTY	1980 LOCATION QUOTIENT
		April 1960	April 1980				
Roscommon	1	5,366	10,696	5,330	99.3	59.7	9.92
Clare	2	4,163	9,044	4,881	117.2	48.8	8.11
Lake	3	3,191	7,040	3,849	120.6	66.9	11.13
Iosco	4	3,679	6,106	2,427	66.0	33.9	5.64
Gladwin	5	3,163	5,849	2,686	84.9	43.3	7.20
Newaygo	6	2,988	5,282	2,294	76.8	28.9	4.80
Alcona	7	2,773	4,995	2,222	80.1	53.3	8.86
Berrien	8	7,013	4,674	-2,339	-33.4	6.8	1.13
Oscoda	9	1,479	4,515	3,036	205.3	61.8	10.27
Cheboygan	10	2,997	4,480	1,483	49.5	35.9	5.96
Montmorency	11	2,987	4,354	1,367	45.8	55.2	9.18
Chippewa	12	2,574	4,298	1,724	67.0	26.2	4.35
Antrim	13	3,122	4,231	1,109	35.5	39.2	6.52
Huron	14	3,261	4,092	831	25.5	22.9	3.81
Van Buren	15	6,501	4,023	-2,478	-38.1	14.0	2.32
Marquette	16	2,026	3,939	1,913	94.4	12.9	2.14
Otsego	17	1,947	3,737	1,790	91.9	41.2	6.84
Mecosta	18	1,863	3,619	1,756	94.3	23.3	3.88
Sanilac	19	3,236	3,591	355	11.0	19.4	3.23
Mackinac	20	2,938	3,476	538	18.3	45.6	7.58
Leelanau	21	2,660	3,475	815	30.6	38.3	6.37
Emmet	22	2,731	3,466	735	26.9	27.7	4.61
Oceana	23	2,337	3,431	1,094	46.8	30.1	5.01
Cass	24	3,263	3,384	121	3.7	15.7	2.61
Allegan	25	3,333	3,371	38	1.1	10.6	1.76
Kalkaska	26	2,152	3,332	1,180	54.8	43.9	7.29
Charlevoix	27	2,332	3,296	964	41.3	29.6	4.93
Montcalm	28	2,532	3,145	613	24.2	15.1	2.50
Benzie	29	2,412	3,093	681	28.2	41.2	6.85
Crawford	30	850	3,078	2,228	262.1	41.1	6.83
Manistee	31	2,258	3,035	777	34.4	24.8	4.12
Grand Traverse	32	3,177	2,990	-187	-5.9	12.7	2.10
Branch	33	1,776	2,984	1,208	68.0	16.6	2.76
Presque Isle	34	1,723	2,898	1,175	68.2	34.7	5.76
Mason	35	2,116	2,815	699	33.0	21.3	3.54
Barry	36	2,689	2,796	107	4.0	14.6	2.43
Osceola	37	1,000	2,764	1,764	176.4	27.8	4.63
Oakland	38	6,130	2,612	-3,518	-57.4	0.7	0.12
Houghton	39	1,719	2,441	722	42.0	14.8	2.46
Jackson	40	2,169	2,432	263	12.1	4.4	0.73
Missaukee	41	955	2,421	1,466	153.5	39.6	6.58
Wayne	42	2,005	2,401	396	19.8	0.3	0.05
Delta	43	1,408	2,323	915	65.0	13.7	2.28
Saint Clair	44	4,019	2,295	-1,724	-42.9	4.4	0.74

Lenawee	45	2,359	2,239	-120	-5.1	6.6	1.10
Kent	46	2,185	2,187	2	0.1	1.3	0.22
Livingston	47	4,297	2,147	-2,150	-50.0	6.1	1.02
Ogemaw	48	2,690	2,131	-559	-20.8	16.4	2.73
Alpena	49	1,253	1,966	713	56.9	14.1	2.34
Gogebic	50	972	1,909	937	96.4	18.9	3.14
Wexford	51	1,057	1,861	804	76.1	16.1	2.67
Hillsdale	52	1,126	1,824	698	62.0	10.7	1.77
Arenac	53	1,375	1,802	427	31.1	23.4	3.89
Iron	54	1,319	1,692	373	28.3	21.9	3.63
Ottawa	55	2,165	1,629	-536	-24.8	3.0	0.50
Schoolcraft	56	798	1,605	807	101.1	32.3	5.36
Menominee	57	598	1,558	960	160.5	13.5	2.24
Saint Joseph	58	1,800	1,509	-291	-16.2	6.7	1.12
Alger	59	814	1,403	589	72.4	27.7	4.60
Luce	60	1,076	1,202	126	11.7	33.6	5.59
Keweenaw	61	1,046	1,174	128	12.2	54.6	9.08
Ontonagon	62	723	1,155	432	59.8	22.9	3.81
Muskegon	63	1,700	1,146	-554	-32.6	2.0	0.33
Isabella	64	594	1,139	545	91.8	6.3	1.04
Dickenson	65	766	1,137	371	48.4	10.1	1.68
Washtenaw	66	1,529	1,023	-506	-33.1	1.0	0.17
Baraga	67	714	1,003	289	40.5	23.5	3.90
Lapeer	68	1,226	850	-376	-30.7	3.7	0.61
Tuscola	69	920	846	-74	-8.0	4.2	0.70
Kalamazoo	70	1,209	730	-479	-39.6	0.9	0.15
Genesee	71	1,406	729	-677	-48.2	0.4	0.07
Midland	72	587	632	45	7.7	2.4	0.40
Ionia	73	762	606	-156	-20.5	3.4	0.57
Calhoun	74	676	458	-218	-32.2	0.8	0.14
Monroe	75	1,907	443	-1,464	-76.8	1.0	0.16
Bay	76	1,100	437	-663	-60.3	1.0	0.17
Macomb	77	967	398	-569	-58.8	0.2	0.03
Ingham	78	314	311	-3	-1.0	0.3	0.05
Saginaw	79	456	227	-229	-50.2	0.3	0.05
Eaton	80	581	173	-408	-70.2	0.5	0.09
Gratiot	81	312	155	-157	-50.3	1.1	0.18
Shiawassee	82	274	116	-158	-57.7	0.5	0.08
Clinton	83	266	87	-179	-67.3	0.5	0.08
MICHIGAN		170,932	215,958	45,026	26.3	6.0	1.00

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[1] Comparable data for 1970 are not available for each county in the state. Number of second homes and other temporary residences was computed by combining the Census of Housing categories "Vacant seasonal and migratory" and "Vacant year-round--held for occasional use."

SOURCES: U.S. Department of Commerce, Bureau of the Census: (1) U.S. Census Housing, 1960. Volume I, States and Small Areas. Part 5, Michigan - New Hampshire. Washington, D.C.: U.S. Government Printing Office, 1963, Tables 12 and 28. (2) U.S. Census of Housing, 1980, Volume 1, Characteristics of Housing Units. Chapter A, General Housing Characteristics, Part 24, Michigan, HC80-1-A24. Washington, D.C.: U.S. Government Printing Office, 1982, Table 46. (3) U.S. Census Housing, 1980. Volume 1, Characteristics of Housing Units. Chapter A, General Housing Characteristics. Part 1, United States Summary, HC80-1-A1. Washington, D.C.: U.S. Government Printing Office, 1983, Table 71.

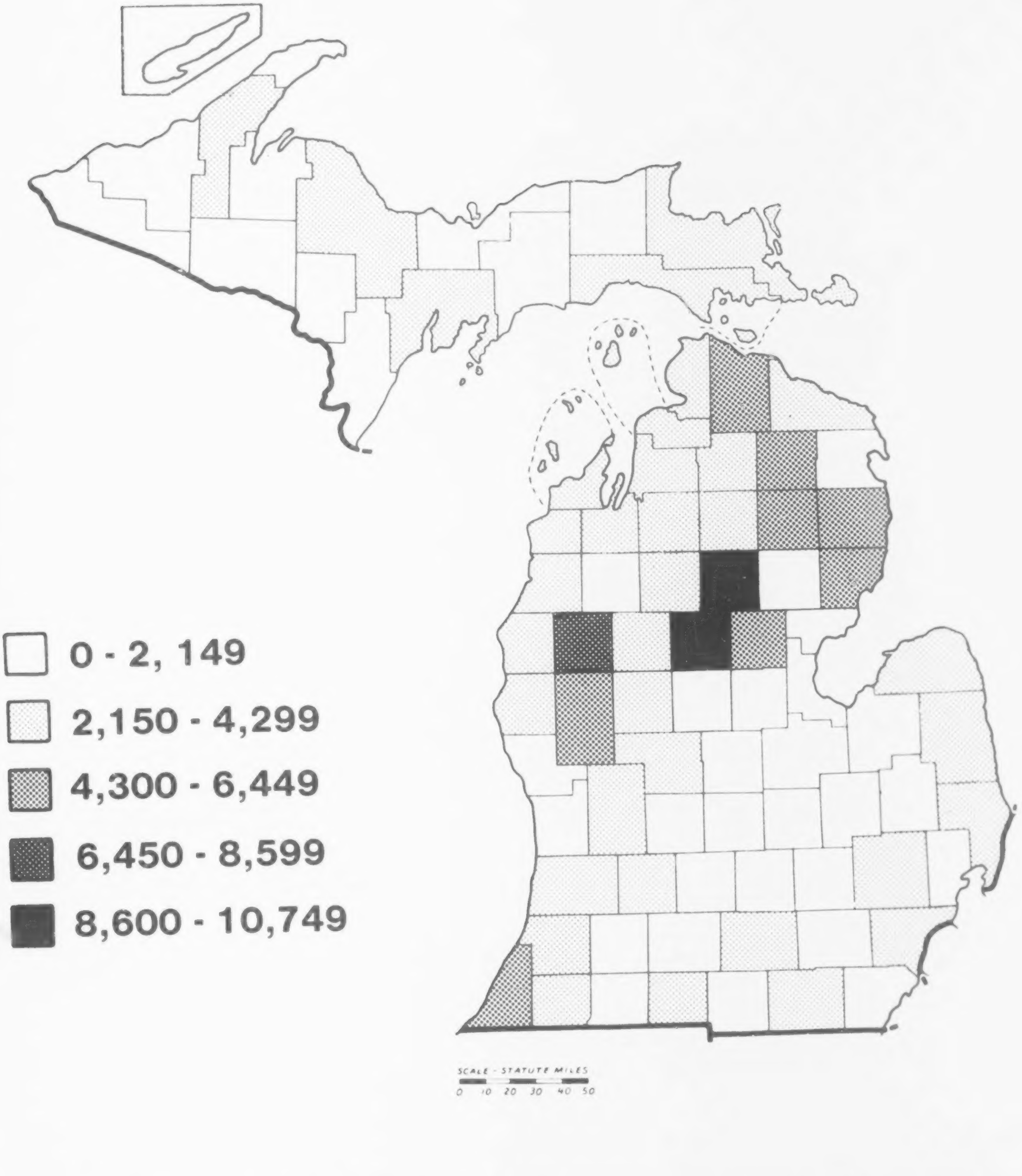
0 - 2, 149
2,150 - 4,299
4,300 - 6,449
6,450 - 8,599
8,600 - 10,749
SCALE - STATUTE MILES
0 10 20 30 40 50

Figure 11-1. Number of second homes and other temporary residences by Michigan county, 1980.

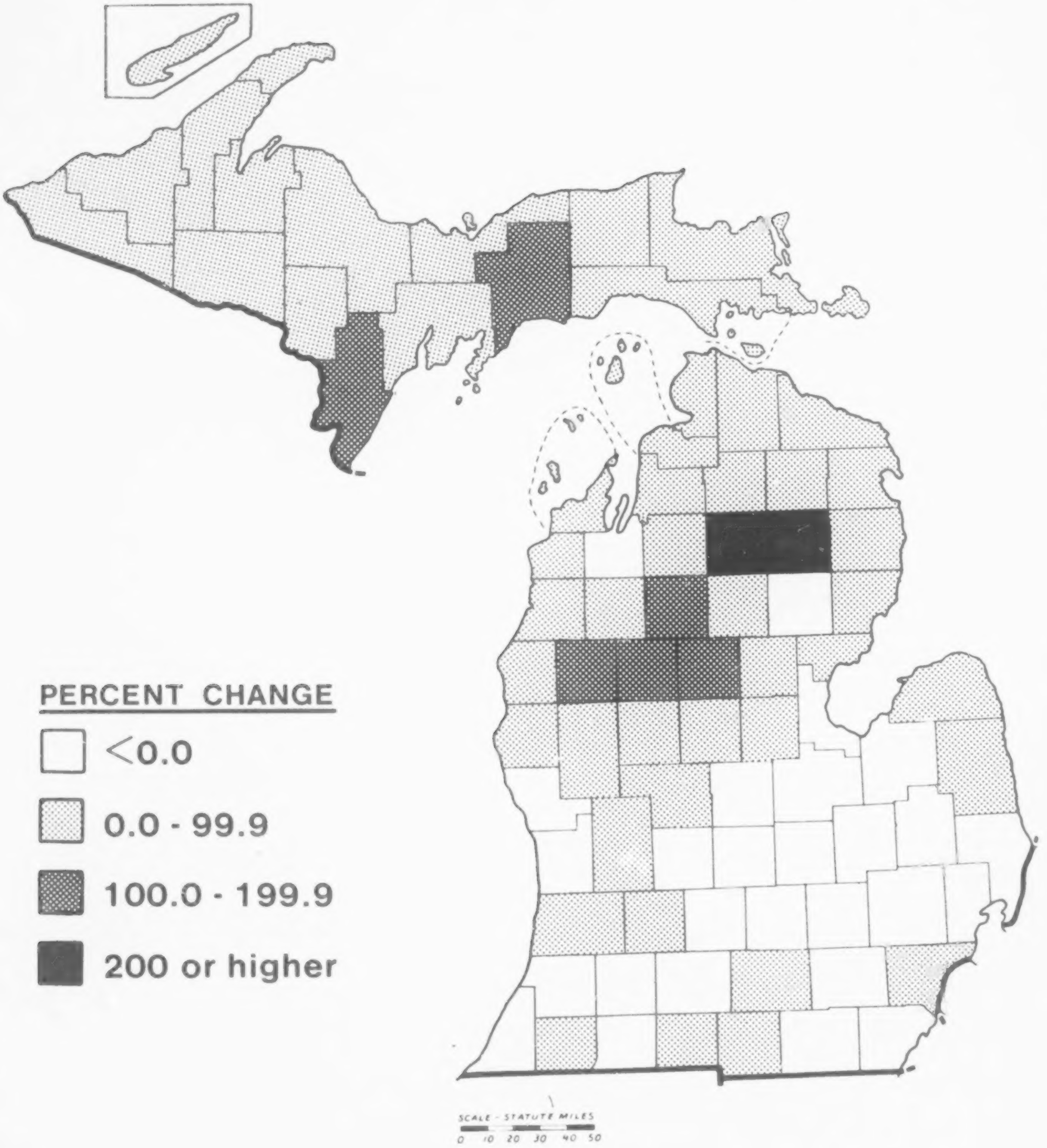
PERCENT CHANGE
<0.0
0.0 - 99.9
100.0 - 199.9
200 or higher
SCALE - STATUTE MILES
0 10 20 30 40 50

Figure 11-2. Percent change in number of second homes and other temporary residences by Michigan county, 1960-1980.

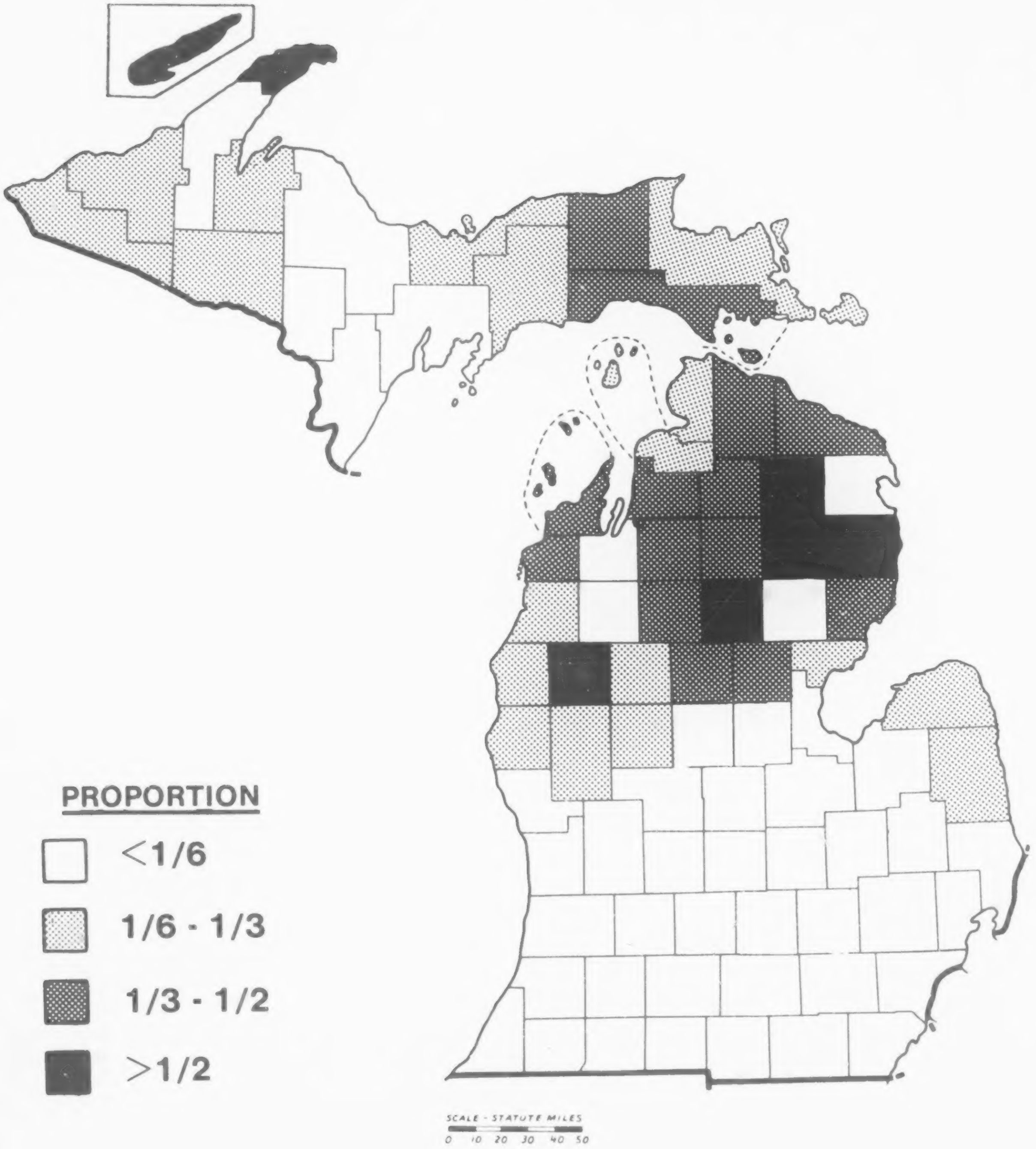
PROPORTION
<1/6
1/6 - 1/3
1/3 - 1/2
>1/2
SCALE - STATUTE MILES
0 10 20 30 40 50

Figure 11-3. Proportion of total housing units in Michigan counties that were second homes or other temporary residences, 1980.

Since temporary residences constitute 6% of the total housing units in Michigan, any county in which the proportion of temporary residences exceeded 6% had a greater than expected proportion of temporary residences and vice versa. The proportion of temporary residences in a given county can be mathematically compared with this 6% benchmark by simply dividing it by 0.06. The resulting ratios, called "location quotients," are shown in Table 11-2. Counties with location quotients greater than 1.0 had a proportion of temporary residences that exceeded the expected value of 0.06; counties with location quotients less than 1.0 had a proportion of temporary residences lower than this expected value. The counties with the highest location quotients were of course the same counties with the highest proportions of temporary residences. This is because dividing the county proportions by a constant converted these proportions to a different scale but did not affect their relative standings.

Conclusions

The information presented in this chapter constitutes only a rudimentary and dated description of the temporary residence situation in Michigan. The large number of temporary residences in Michigan vis-a-vis other states warrants further research into this phenomenon. Such research is needed to document the social, economic, and environmental benefits and costs of second homes and seasonal residency in Michigan, the demographic and socioeconomic characteristics of those who use such dwellings, and whether the large number of temporary residences in Michigan can be exploited for marketing purposes.

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CHAPTER 12

TOURIST ATTRACTIONS IN MICHIGAN

Daniel M. Spotts

Introduction

The opportunity to visit tourist attractions is one of the principal motivations for pleasure travel in Michigan. Ross Roy, Inc. estimated that 48% of the pleasure trips taken in Michigan by urban residents of the Great Lakes region were taken by individuals who stated that visiting a natural attraction, man-made attraction, historic site, landmark, or museum was "of interest when on a pleasure trip" (Table 3-4; page 32). Similarly, Spotts and Mahoney (1989:9) found that 60% of a sample of summer travel parties contacted in Michigan's central Upper Peninsula had visited or planned to visit an historic site on their trip. Visiting such sites was the most frequently-cited recreation activity engaged in by the sample. The popularity of visiting tourist attractions in general may be due in part to the fact that it is an activity in which people of all ages can participate.

The term "tourist attraction" in its broadest sense can denote anything that attracts tourists, whether it be Huron National Forest, fall color, charter fishing, the Pere Marquette River, or Fort Mackinac. However, for purposes of this chapter the term is meant to designate developed sites which contain significant cultural, historical, and/or scenic resources that are managed by public or private entities to provide recreation to the general public. Sites which may be heavily-visited but do not include significant cultural, historical, and/or scenic resources (e.g., Holland State Park) are excluded from this definition. Travel events (e.g., National Cherry Festival) are also excluded, although this certainly does not discount the important role such events play in attracting tourists to Michigan. The Ross Roy survey mentioned above found that 17% of pleasure trips to Michigan were taken by individuals who stated that attending festivals, fairs/exhibits, cultural events, professional or spectator sports events, and/or industry tours was "of interest when on a pleasure trip" (Table 3-4; page 32).

This chapter primarily presents statistics on attendance at tourist attractions in Michigan. Information on the state's tourist attractions that is more qualitative in nature may be found in the publications listed at the end of the chapter. The first section of the chapter presents a comparison of the attendance levels of selected tourist attractions in Michigan. This is followed by a discussion of trends and patterns in attendance at narrower groups of attractions. The final section of the chapter presents descriptive information on some of the commercial attractions in the state.

Attendance Levels of Selected Tourist Attractions in Michigan

A list of 39 tourist attractions in Michigan and their approximate 1989 attendance is presented in Table 12-1. This list basically includes attractions that were willing to have their attendance levels published, and by no means includes all the attractions in the state. In particular, many commercial attractions (e.g., Manitou Island Transit, Call of the Wild Museum) are not included. Thus if an attraction happens to be ranked 15th in the table this does not necessarily mean that it is the 15th most heavily visited attraction in Michigan. On the other hand, the list does include most of the most heavily visited attractions in the state, including Frankenmuth, Henry Ford Museum and Greenfield Village, Sleeping Bear Dunes National Lakeshore, Mackinac Island, the Detroit Institute of Arts, the Detroit Zoo, Soo Locks, Pictured Rocks National Lakeshore, Tahquamenon Falls State Park, and Porcupine Mountains

Table 12-1. Approximate attendance at selected tourist attractions in Michigan, 1989.

Attraction	Location	Approximate 1989 Attendance
Frankenmuth	Frankenmuth	3,000,000
Henry Ford Museum and Greenfield Village	Dearborn	1,300,000
Sleeping Bear Dunes National Lakeshore	Empire	1,250,000
Mackinac Island	Mackinac Island	950,000[a]
Detroit Institute of Arts	Detroit	948,000
Detroit Zoo	Detroit	878,000
Soo Locks	Sault Ste. Marie	738,000
Pictured Rocks National Lakeshore	Munising	565,000
Tahquamenon Falls State Park	Newberry	499,000
Porcupine Mountains Wilderness State Park	Silver City	462,000
Interlochen Center for the Arts	Interlochen	250,000[b]
Michigan Historical Museum	Lansing	236,000[c]
Hartwick Pines State Park	Grayling	226,000
Fort Mackinac	Mackinac Island	205,000
Fort Wilkins State Park	Copper Harbor	168,000
Crossroads Village	Flint	143,000
Fort Michilimackinac State Historic Park	Mackinaw City	135,000
Fayette State Park	Fayette	115,000
Meadowbrook Hall	Rochester	99,000
Gerald R. Ford Presidential Museum	Grand Rapids	78,000
Cook Energy Information Center	Bridgman	68,000
Palms Book State Park	Manistique	64,000
Mill Creek State Historic Park	Mackinaw City	61,000
State Capitol Tours	Lansing	58,000
Seney National Wildlife Refuge	Seney	55,000
Hidden Lake Gardens	Tipton	51,000
The Sloop Welcome	Mackinaw City	40,000
Edsel and Eleanor Ford House	Gross Pointe Shores	40,000
Kellogg Bird Sanctuary	Augusta	35,000
Henry Ford Estate	Dearborn	28,000
White Pine Village	Ludington	19,000
Isle Royale National Park	In Lake Superior	16,000
Father Marquette National Memorial and Museum	St. Ignace	16,000
Michigan Iron Industry Museum	Negaunee	13,000
Walker Tavern Historic Complex	Cambridge Junction	9,000
Civilian Conservation Corps Museum	Roscommon	7,000
Coppertown USA Mining Museum	Calumet	4,000
Sanilac Petroglyphs	New Greenleaf	4,000
Mann House	Concord	1,000

NOTE: List does not include many popular commercial attractions. All figures include visits by local residents as well as tourists. Such visits can be considered negligible in the case of some attractions (e.g., Fort Mackinac) but not others (e.g., Detroit Zoo).

[a] Includes attendance at Fort Mackinac.

[b] Nonlocal attendance estimated to be about 75,000.

[c] Museum opened March 6, 1989.

SOURCES: Managers of the various attractions; Frankenmuth Chamber of Commerce; Mackinac Island Chamber of Commerce.

Wilderness State Park.

The most heavily visited attractions in the list are not necessarily those that are most heavily visited by tourists, if we define the latter as individuals traveling for pleasure who either stay away from home overnight or are on day trips of 60 miles or more one-way from their residences. This is because many of these attractions, particularly those in the Detroit area, are visited by large numbers of local residents as well as tourists. Moreover, even those attractions that are most heavily visited by tourists may not necessarily play the greatest role in stimulating tourist travel in Michigan. This is because the high attendance at some such attractions (e.g., Soo Locks, Pictured Rocks National Lakeshore) is due not only to their popular appeal but also to their close proximity to major highways, which allows large numbers of travelers who are en route to other destinations to stop briefly for a visit. Other attractions, such as Sleeping Bear Dunes National Lakeshore and Fort Wilkins State Park, are not located on or close to major highways. Consequently, their visitors probably include a higher proportion of people who traveled to the area specifically to visit that attraction. An additional problem which limits the comparability of the attendance figures shown in the table is the different methods by which these figures were derived.

In spite of the above limitations, several observations can be made based on the information in Table 12-1. First, the most heavily visited attractions in the list (i.e., Frankenmuth, Henry Ford Museum and Greenfield Village, and Sleeping Bear Dunes National Lakeshore) are located in Michigan's populous Lower Peninsula and annually receive over a million visits. However, several attractions which annually receive between 400,000 and a million visits are located in the Upper Peninsula, including Mackinac Island, Soo Locks, Pictured Rocks National Lakeshore, Tahquamenon Falls State Park, and Porcupine Mountains Wilderness State Park. Few if any heavily visited attractions are located in southwest Lower Michigan, northeast Lower Michigan, or the Thumb region. Finally, it is apparent that many of the most heavily visited attractions in the state are operated by government agencies. This highlights the importance of cooperation between the public and private sectors in the management and marketing of these attractions and surrounding recreation and travel resources.

Various commercial enterprises that facilitate visitors' enjoyment of the major attractions in the Upper Peninsula probably contribute to the relatively high levels of visitation these attractions receive and to the overall attractiveness of the region as a tourist destination. Examples of such commercial operations include the Star Line Mackinac Island Passenger Service, which ferries tourists to and from the Island via hydro-jet boats; Pictured Rocks Boat Cruise, which provides visitors with views of the Pictured Rocks from Lake Superior; the Toonerville Trolley, which takes tourists to Tahquamenon Falls via a narrow gauge railroad and a boat trip on the Tahquamenon River; and Soo Locks Boat Tours, which takes visitors through the Locks alongside ocean-going freighters. The Upper Peninsula also contains many other important attractions which further contribute to the region's drawing power (e.g., Isle Royale National Park, Fort Wilkins State Park, Fayette State Park, Palms Book State Park, Seney National Wildlife Refuge, the S.S. Valley Camp and Marine Museum, Iron Mountain Iron Mine).

Trends and Patterns in Attractions Attendance

Aggregate Attractions Attendance

Recent trends in aggregate summer attendance at a judgment sample of 30 tourist attractions in Michigan are portrayed in Figure 12-1. "Summer" is defined as the months of June, July, and August. The attractions included in the sample, organized by the three regions shown in Figure P-1 (page xxxiv), are listed below:

Upper Peninsula

1. Arcadian Copper Mine
2. Coppertown U.S.A. Mining Museum
3. Father Marquette Nat'l Memorial
4. Fort Mackinac
5. Iron Mountain Iron Mine
6. Isle Royale National Park
7. Quincy Mine Hoist
8. S.S. Valley Camp
9. Toonerville Trolley
10. Tower of History

Northern Lower Peninsula

1. Amon's Orchard Tours
2. Call of the Wild Museum
3. Fort Michilimackinac
4. Jesse Besser Museum
5. Mac Wood's Dune Rides
6. Manitou Island Transit
7. Mill Creek State Park
8. The Music House
9. The Sloop Welcome
10. White Pine Village

Southern Lower Peninsula

1. Cook Energy Information Center
2. Crossroads Village
3. Gerald R. Ford Presidential Museum
4. Henry Ford Museum/Greenfield Village
5. Hidden Lake Gardens
6. Impression 5 Museum
7. Kellogg Bird Sanctuary
8. Michigan Space Center
9. Windmill Island
10. Zehnder's

The sample included commercial and public-sector attractions which compile accurate counts of attendance and were willing to release such counts to the TTRRC.[1] It was selected to represent the various types and locations of the state's tourist attractions to the fullest extent possible. Pictured Rocks National Lakeshore, Sleeping Bear Dunes National Lakeshore, and Soo Locks were excluded from the sample since these heavily-visited attractions compile only estimated attendance figures, small errors in which could have easily overwhelmed any changes in actual attendance at other attractions in the sample.

The values graphed in Figure 12-1 are index numbers as opposed to raw values. Index numbers are simply raw values expressed as percentages of base year values, in this case values pertaining to the 1985 summer season. The use of index numbers places the results pertaining to the three regions on the same percentage scale to make it easier to compare trends across regions. It does not change the values of "average annual change" reported or the basic pattern of the trends plotted from what would have emerged if raw values had been employed.

The trends portrayed in the figure show that aggregate attendance at the 30 attractions fluctuated considerably during 1985-90, particularly in the Northern and Southern Lower Peninsulas, culminating in a downward trend since 1988 in all three regions. Overall, average annual rates of change in aggregate attendance equalled 0.5% in the Upper Peninsula, -3.5% in the Northern Lower Peninsula, 0.7% in the Southern Lower Peninsula, and -0.1% statewide. A similar statewide average annual rate of change of 0.2% is obtained if one examines aggregate attendance at a subset of only 12 of the 30 attractions over successive *12-month periods* as opposed to successive *summer seasons* (Table 12-2).

These low or negative annual rates of change largely resulted from particularly poor attendance during the summer of 1990. Aggregate attendance during the 1990 season decreased 2% in the Upper Peninsula, 17% in the Northern Lower Peninsula, 4% in the Southern Lower Peninsula, and 6% statewide compared to the 1989 season. An economic downturn and higher gasoline prices following the Iraqi invasion of Kuwait may have contributed to these declines.

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[1] The cooperation of the managers of these attractions is gratefully acknowledged.

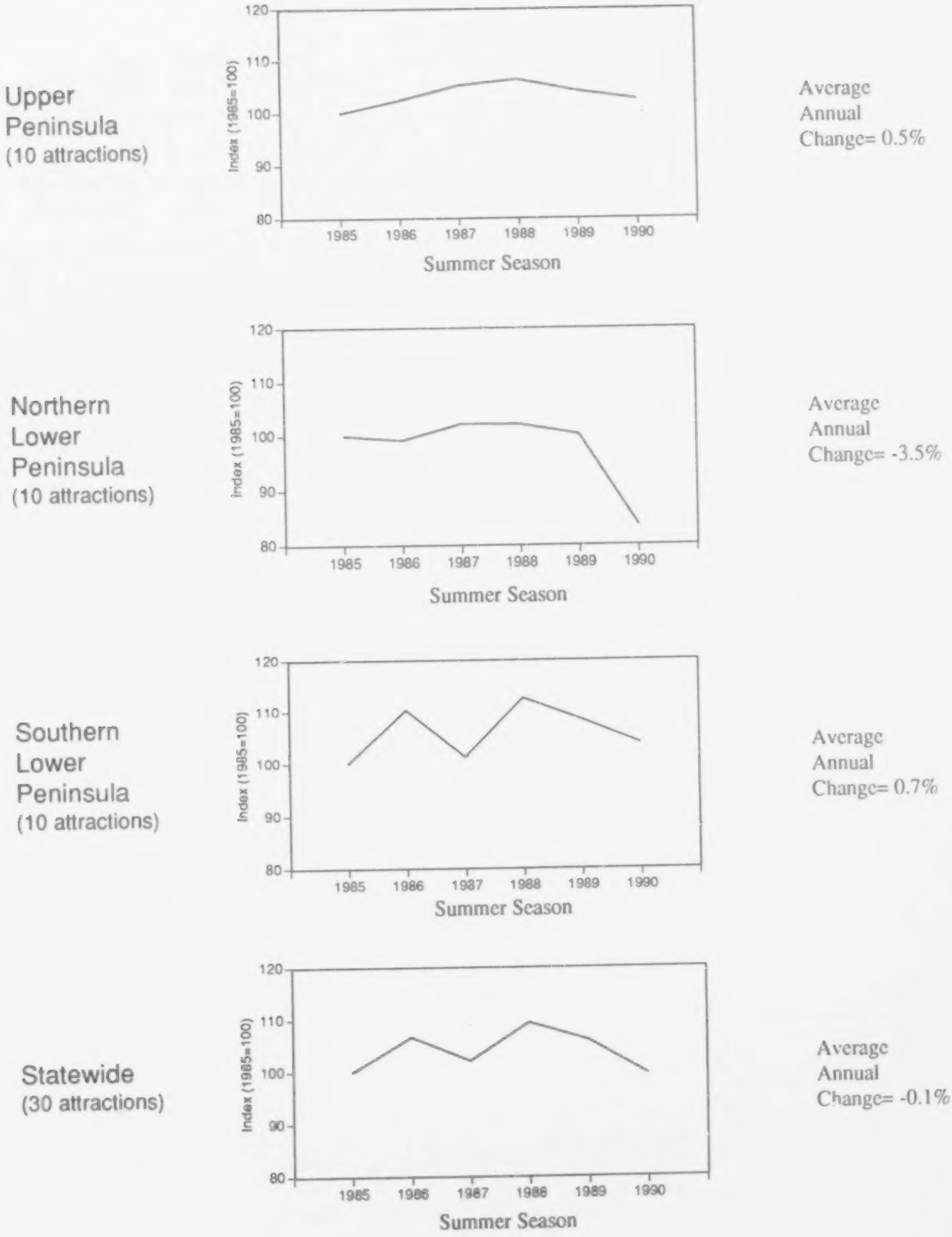

Figure 12-1. Aggregate summer attendance at a sample of tourist attractions in Michigan, by region, 1985-1990.

Table 12-2. Attendance at selected tourist attractions in Michigan, 1985-90.

Attraction	1985	1986	1987	1988	1989	1990	Avg. Annual Change (%)
Cook Energy Information Center	31,523	49,680	57,896	70,219	68,000	71,997	18.0
Crossroads Village	108,814	153,308	135,649	135,789	140,782	154,260	7.2
Isle Royale National Park	12,823	12,712	15,017	13,892	15,509	16,134	4.7
Fort Mackinac	188,836	194,973	210,726	212,234	204,936	213,021	2.4
Hidden Lake Gardens	51,535	53,827	53,235	49,813	51,198	57,686	2.3
White Pine Village	15,254	16,026	17,266	18,465	19,113	17,102	2.3
Fort Michilimackinac State Historic Park	140,481	135,950	150,774	142,617	134,998	120,927	-3.0
Father Marquette National Memorial and Museum	20,374	19,657	17,786	18,139	15,880	16,850	-3.7
Kellogg Bird Sanctuary	38,686	36,423	39,321	35,738	35,055	30,261	-4.8
Mill Creek State Historic Park	74,262	68,039	68,868	59,435	60,804	57,336	-5.0
Gerald R. Ford Presidential Museum	109,245	92,200	96,059	95,404	77,820	81,132	-5.8
The Sloop Welcome	38,245	28,933	30,454	35,099	40,480	0[a]	...
Total	830,078	861,728	893,051	886,844	864,575	836,706	0.2
Pictured Rocks National Lakeshore	397,884	406,619	474,934	553,774	565,242	562,573	7.2
Sleeping Bear Dunes National Lakeshore	N.A.	N.A.	1,222,811	1,317,530	1,250,416	1,216,870	N.A.
Soo Locks	N.A.	N.A.	783,953	803,625	738,116	594,996	N.A.

NOTE: In 1987 new counting procedures were initiated at Sleeping Bear Dunes National Lakeshore and Soo Locks. The resulting attendance statistics are incomparable with those pertaining to previous years.

[a] The Sloop Welcome was closed for repairs in 1990.

SOURCE: Managers of the various attractions.

To some extent the large drop in aggregate attendance that occurred in the Northern Lower Peninsula during the summer of 1990 resulted from the fact that the Sloop Welcome was closed for repairs at that time. However, even if this attraction is excluded from the sample, aggregate attendance during the summer of 1990 still declined 6% in the Northern Lower Peninsula and 4% statewide compared to the previous summer. Including the Welcome in the sample is appropriate since the closure of this attraction very likely had a negative effect on travel activity in the Mackinac Straits area.

Attendance at Individual Attractions

As shown in Table 12-2, during 1985-90 positive average annual rates of change in visitation occurred at Cook Energy Information Center (+18%), Crossroads Village (+7%), Pictured Rocks National Lakeshore (+7%), Isle Royale National Park (+5%), Fort Mackinac (+2%), Hidden Lake Gardens (+2%), and White Pine Village (+2%). Negative average annual rates of change occurred at the Gerald R. Ford Presidential Museum (-6%), Mill Creek State Historic Park (-5%), the Kellogg Bird Sanctuary (-5%), the Father Marquette National Memorial and Museum (-4%), and Fort Michilimackinac State Historic Park (-3%).

Trends in the number of overnight stays that occurred in Michigan units of the National Park System are presented in Table 12-3. These statistics show that while overall visits to Isle Royale National Park increased at an average annual rate of 5% during 1985-90 (Table 12-2), overnight stays in the Park increased at an average annual rate of only 1%. Similarly, while overall visits to Pictured Rocks National Lakeshore increased at an average annual rate of 7% during 1985-90 (Table 12-2), overnight stays in the Lakeshore decreased at an average annual rate of 1%. Comparable statistics on Sleeping Bear Dunes National Lakeshore cannot be computed due to missing data pertaining to 1985 and 1986. However, statistics for 1987 through 1990 show an increase in both overall visits and overnight stays between 1987 and 1988, followed by steady decreases in both variables in 1989 and 1990 (Tables 12-2 and 12-3).

Statistics on monthly attendance at 14 selected attractions are shown in Table 12-4. Most of the figures display the summer peaking that is characteristic of tourism activity in Michigan. A major exception is apparent in the case of Hidden Lake Gardens, which experienced higher visitation in May and October than in the summer months.

Characteristics of Selected Commercial Attractions in Michigan

The characteristics of selected commercial attractions in Michigan that were listed in Amusement Business' 1990 *Funparks Directory* are presented in Table 12-5. Many of the attractions described in the table obviously cater to local residents as well as to tourists. Moreover, the table omits several important commercial attractions that were not listed in the *Directory* (e.g., Pictured Rocks Boat Cruise, Toonerville Trolley).

Table 12-3. Number of overnight stays in Michigan units of the National Park System, 1977-90.

	CONCESSIONER-OPERATED		NATIONAL PARK SERVICE-OPERATED				TOTAL
Year	Lodging	Campground	Tents	RVs	Back-country	Misc. Camping	
ISLE ROYALE NATIONAL PARK							
1977	8,544	0	23,969	0	22,615	17,444	72,572
1978	9,541	0	20,321	0	19,743	17,939	67,544
1979	9,657	333	27,140	0	21,144	5,736	64,010
1980	8,970	282	19,740	0	28,043	2,303	59,338
1981	9,564	505	6,870	0	37,853	1,842	56,634
1982	9,660	1,537	5,985	0	35,929	1,404	54,515
1983	8,294	1,219	6,665	0	35,221	1,084	52,483
1984	7,894	1,704	6,118	0	30,864	2,576	49,156
1985	9,319	1,415	6,433	0	32,262	2,751	52,180
1986	10,388	1,745	5,918	0	33,228	3,392	54,671
1987	5,993	1,243	6,292	0	33,251	4,812	51,591
1988	6,690	2,368	5,932	0	31,807	4,016	50,813
1989	6,562	1,434	6,446	0	33,977	3,982	52,401
1990	5,822	1,537	6,981	0	37,489	3,769	55,598
PICTURED ROCKS NATIONAL LAKESHORE							
1977	0	0	7,064	6,870	7,477	172	21,583
1978	0	0	8,635	5,754	7,224	181	21,794
1979	0	0	8,096	5,187	8,854	538	22,675
1980	0	0	9,901	5,713	9,270	166	25,050
1981	0	0	8,332	5,211	8,938	0	22,481
1982	0	0	9,348	5,033	9,320	0	23,701
1983	0	0	9,105	4,549	14,007	0	27,661
1984	0	0	9,025	4,578	13,269	0	26,872
1985	0	0	9,648	5,616	11,128	0	26,392
1986	0	0	10,222	5,831	8,913	0	24,966
1987	0	0	8,342	4,426	9,029	0	21,797
1988	0	0	9,503	3,789	9,448	0	22,740
1989	0	0	9,783	3,272	10,418	0	23,473
1990	0	0	11,357	3,569	10,331	0	25,257
SLEEPING BEAR DUNES NATIONAL LAKESHORE[1]							
1987	0	27,363	34,140	20,400	12,713	0	94,616
1988	0	36,160	35,619	19,510	16,537	0	107,826
1989	0	25,555	37,064	20,477	18,003	0	101,099
1990	0	38,864	23,320	7,347	18,560	0	88,091

[1] Due to changes in counting procedures, figures prior to 1987 are not comparable to those presented here.

NOTE: An "overnight stay" is the passing of one night within a park by a visitor. An overnight stay occurs each night a visitor remains in the park.

SOURCE: U.S. National Park Service. National Park Service Statistical Abstract, annual.

Table 12-4. Attendance at selected tourist attractions in Michigan by month, 1990.

ATTRACTION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Cook Energy Information Center	833	5,312	6,732	5,517	7,385	7,465	7,294	7,099	6,822	5,926	7,412	4,200	71,997
Coppertown USA Mining Museum	0	0	0	0	0	293	1,361	1,508	681	278	0	0	4,121
Father Marquette Nat'l Memorial & Museum	0	0	0	0	779	1,755	4,907	6,685	2,724	0	0	0	16,850
Fort Mackinac	0	0	0	0	11,590	34,493	67,694	69,727	22,208	7,309	0	0	213,021
Fort Michilimackinac State Historic Park	0	0	0	0	8,523	18,815	39,006	40,183	11,044	3,356	0	0	120,927
Gerald R. Ford Presidential Museum	4,769	3,805	5,666	6,771	11,759	7,544	10,565	9,537	8,178	5,741	4,247	2,550	81,132
Hidden Lake Gardens	0	0	0	5,540	11,781	6,724	8,666	6,070	5,569	13,336	0	0	57,686
Isle Royale National Park	0	0	0	0	431	2,586	5,691	6,074	1,233	119	0	0	16,134
Kellogg Bird Sanctuary	917	683	1,417	2,817	3,606	3,848	4,324	3,596	2,826	4,113	1,706	408	30,261
Mill Creek State Historic Park	0	0	0	0	4,415	8,838	17,251	17,923	6,633	2,276	0	0	57,336
Pictured Rocks National Lakeshore	15,138	12,429	12,040	18,676	41,347	69,093	138,296	133,395	65,772	38,386	10,488	7,513	562,573
Rose Hawley Museum	246	621	424	433	455	1,010	1,419	1,355	270	669	304	547	7,753
Sleeping Bear Dunes National Lakeshore	7,060	7,294	17,436	34,242	65,994	140,452	397,313	335,654	116,499	70,337	17,690	6,899	1,216,870
Soo Locks	344	418	2,266	17,694	41,090	87,560	166,180	160,352	80,580	32,868	3,813	1,831	594,996

SOURCE: Managers of the various attractions.

Table 12-5. Characteristics of selected commercial attractions in Michigan.

Name	Location	Principal Facilities	Operates	1989 Attendance Level
Hit-Em Here	Battle Creek	Game concessions, minigolf, snack stand(s), driving range, batting cages	N.A.	N.A.
Kingman Museum of Natural History	Battle Creek	Bike trails, botanical gardens, museum, picnic areas, planetarium, tours	Year-round	Under 100,000
Mussell Beach Amusement	Bay City	Amusement park	N.A.	N.A.
Animal Kingdom Wildlife Refuge	Byron Center	Animal show, hiking trails, meeting rooms, petting zoo, picnic area, tours, hayrides, field trips, haunted house	N.A.	N.A.
Parks 'n Lakes Fun Center	Cadillac	Amusement park	N.A.	N.A.
Deer Forest Park	Coloma	Themed park	N.A.	N.A.
Henry Ford Museum and Greenfield Village	Dearborn	Train ride, gift shop, museum, restaurant(s), snack stand(s), tours	N.A.	N.A.
Marvin's Marvelous Mechanical Museum	Farmington Hills	Kiddie rides, snack stand(s)	Year-round	100,001-300,000
Robert T. Longway Planetarium	Flint	Planetarium, tours	Year-round	100,001-300,000
Barvarian Falls Park	Gaylord	Kiddie ride(s), gift shop, go-kart track, minigolf, museum	Apr. 1-Oct.31	Under 100,000
Splash Family Water Park	Grand Rapids	Kiddie ride(s), arcade, gift shop, hotel/motel, snack stand(s), swimming pool, water attraction	N.A.	N.A.
Village Green Miniature Golf & Games	Grand Rapids	Game concessions, minigolf, snack stand(s)	May 28-Sept.30	Under 100,000
Dutch Village	Grand Rapids	Themed park, tourist attraction	N.A.	N.A.
Funland Amusement Park	Houghton Lake	Kiddie ride(s), train ride, arcade, gift shop, golf courses, go-kart track, minigolf, snack stand(s), batting cages, bumper boats, moonwalks	N.A.	N.A.
Fun Country	Interlochen	Kiddie ride(s), train ride, arcade, gift shop, go-kart track, minigolf, picnic areas, snack stand(s), water attraction	N.A.	N.A.
Three Flags Over Mackinac at Surrey Hills	Mackinac Island	Animal show, bike trails, botanical gardens, gift shop, hiking trails, museum, petting zoo, picnic area, snack stand(s), horse and carriage rides	N.A.	N.A.

Cedar View Golfland	Mason	Action sports park	N.A.	N.A.
Formula K Family Fun Park	Mattawan	Kiddie ride(s), auto racetrack, go-kart track, minigolf, water attraction	Apr.15-Oct.31	Under 100,000
Craig's Cruisers	Mears	Kiddie ride(s), camping, game concessions, gift shop, go-kart track, live entertainment, minigolf, picnic area, snack stand(s), swimming pool, water attraction	N.A.	N.A.
Michigan's Adventure Amusement Park	Muskegon	Kiddie ride(s), major ride(s), train ride, arcade, game concessions, gift shop, live entertainment, picnic area, snack stand(s), stage shows, water attraction	May 12-Sept.16	100,001-300,000
Pleasure Island Water Fun Park	Muskegon	Kiddie ride(s), arcade, beach, gift shop, minigolf, picnic area, snack stand(s), water attraction	May 27-Sept.7	100,001-300,000
Kelley's Sportsland	Niles	Arcade, driving range, minigolf, batting cages	Mar.3-Oct.1	Under 100,000
Prehistoric Forest	Onsted	Tourist attraction	N.A.	N.A.
Dinosaur Gardens	Ossineke	Gift shop, museum, snack stand(s), tours	N.A.	N.A.
Deer Acres	Pinconning	Amusement park	N.A.	N.A.
Mystery Spot	St. Ignace	Arcade, gift shop, golf courses	May 15-Oct.20	Under 100,000
Totem Village	St. Ignace	Camping, gift shop, hiking trails, minigolf, museum, picnic area	May 1-Oct.31	Under 100,000
Blue Star Playground	Saugatuck	Arcade, driving range, go-kart track, minigolf, picnic area, snack stand(s), water attraction, batting cage	May 4-Sept.30	Under 100,000
Fideland Fun Park	South Haven	Kiddie ride(s), arcade, beach, bike trails, boating, camping, driving range, fishing, game concessions, gift shop, go-kart track, hiking trails, minigolf, picnic area, snack stand(s), water attraction	May 1-Oct.1	Under 100,000
Bear's Lair Fun Park	Tipton	Arcade, gift shop, go-kart track, minigolf, snack stand(s), water attraction	Apr.15-Sept.30	100,001-300,000
Arne's Fun Land	Traverse City	Amusement park	N.A.	N.A
Iron Mountain Iron Mine	Vulcan	Train ride, gift shop, museum, tours	June 1-Oct.15	Under 100,000
Westworld	Westland	Tourist attraction	N.A.	N.A.

SOURCE: Amusement Business. 1990. Funparks Directory: 1990 International Guide to Tourist Attractions, Themed Parks and Fun Parks. Nashville, TN: Billboard Publications, Inc., Amusement Business Division.

Summary and Conclusions

Michigan contains several attractions which annually receive over a million visits. The most heavily visited attractions in the state are located in the Lower Peninsula, although many other very popular attractions are located in the Upper Peninsula. Government agencies manage many of the state's most heavily visited attractions. Aggregate attractions attendance in Michigan during the summer months appears to have declined since 1988.

While the analysis of attendance statistics presented in this chapter provides some useful insights, many questions remain about the state's tourist attractions which can be answered only by survey research. Some of these questions have already been suggested in the above discussion. For example, what percentage of the visits at key attractions in Michigan are by tourists versus local residents? What are the characteristics of these tourists? Which attractions play the most important role in attracting tourists to Michigan in general, and in stimulating tourist spending in particular? What proportion of prospective travelers to Michigan have never visited the state's principal attractions, and what proportion have never done so because they have never heard of these attractions? And finally, which existing and potential attractions would prospective travelers be most interested in visiting? Since the opportunity to visit tourist attractions is a primary motivation for pleasure travel to Michigan, obtaining the answers to these questions may yield useful insights into how to more effectively stimulate such travel.

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CHAPTER 13

STATE PARKS IN MICHIGAN

Joseph D. Fridgen, Daniel M. Spotts, Edward M. Mahoney, and Charles M. Nelson

Introduction

Michigan's state parks contribute significantly to the state's attractiveness as a tourist destination. They provide visitors with both an abundance of outdoor recreation opportunities and a wide variety of scenic and historic attractions. Indeed, many of the most important tourist attractions in Michigan, such as Fort Mackinac, Tahquamenon Falls, the Porcupine Mountains, Fayette townsite, and Hartwick Pines are located in state parks. Because of the importance of state parks to Michigan's travel and tourism system, this chapter provides detailed information on both supply- and demand-side aspects of the park system. It compares Michigan's state park system to those of other states on a number of key variables, presents acreage and visitation statistics on each unit of the system, and provides a descriptive profile of the system's clientele based on the results of a recent visitor survey.

An Overview of the System

State parks in Michigan are administered by two distinct agencies within the Michigan Department of Natural Resources: the Parks Division and the Mackinac Island State Park Commission. The former has responsibility for 67 state parks, 17 state recreation areas, 2 state trails, 3 scenic/historic sites, and 8 unadministered units. The latter has responsibility for three state parks in the Mackinac Straits area that contain historic attractions--Fort Michilimackinac State Historic Park, Mackinac Island State Park, and Mill Creek State Historic Park. The overall state park system includes 264,571 acres of land--262,148 acres under the control of the Parks Division, and 2,423 acres under the control of the Mackinac Island State Park Commission (Table 13-1).

State parks and recreation areas are located throughout the state (Figure 13-1). However, concentrations ~~of the~~ parks/areas are found in the Mackinac Straits region (where significant natural and historic sites are located), along the coast of Lake Michigan (where excellent sandy beaches are found), and in southeast Michigan (where about half of the state's population resides).

A National Perspective

Michigan's state park system is one of the largest in the nation. In FY1988-89, Michigan ranked fifth in the nation in number of operational state parks, ninth in total acreage of state parks, and first in number of modern campsites in state parks (Table 13-2). Michigan's state park system is also one of the most heavily visited in the nation. In FY1988-89 the system ranked tenth in number of day visits, second in number of overnight visits, and tenth in total number of visits (Table 13-3). Michigan's rankings in terms of a number of financial variables, however, are somewhat lower than its rankings in terms of size and visitation. In FY1988-89 Michigan ranked only 19th in state legislative appropriations to its state park operating budget, 12th in total operating budget, 42nd in percentage of overall state government budget spent on state parks, and 24th in total fixed capital outlay budget (Table 13-4). The legislatures of Ohio, Illinois, Kentucky, and Minnesota each appropriated substantially more funds to the operating budgets of their respective state park systems than

Table 13-1. Acreages of and number of campsites in units of Michigan's state park system.

UNIT	ACRES As of 10/1/89	NUMBER OF CAMPSITES[a] Modern	Rustic	Total	NO. CAMPSITES WITH ELECTRICITY[a]
UNITS MANAGED BY MDNR PARKS DIVISION					
STATE PARKS (67 units)					
Algonac	1,376	221	80	301	221
Aloha	91	287	0	287	287
Baraga	56	119	0	119	109
Bay City	196	263	0	263	263
Bewabic	316	144	0	144	144
Brimley	151	271	0	271	271
Burt Lake	406	375	20	395	375
Cambridge State Historic	183	0	0	0	0
Cheboygan	932	78	0	78	78
Clear Lake	290	200[b]	0	200	105
Craig Lake	7,538	0	0	0	0
Dodge Bros. No. 4	136	0	0	0	0
Duck Lake	707	0	0	0	0
Fayette	803	80[c]	0	80	80
Fisherman's Island	2,919	0	90	90	0
Fort Wilkins	199	165	0	165	165
Grand Haven	48	182	0	182	182
Grand Mere	991	0	0	0	0
Harrisville	94	229	0	229	229
Hartwick Pines	9,295	62	0	62	42
W.J. Hayes	654	212	0	212	160
Hoeft	301	144	0	144	144
P.J. Hoffmaster	1,043	333	0	333	333
Holland	143	368	0	368	344
Indian Lake	568	301	0	301	301
Interlochen	187	477	71	548	477
Lake Gogebic	361	125	0	125	93
Lakeport	566	315	0	315	315
Leelanau	1,343	0	50	50	0
Ludington	4,583	398	0	398	398
Maybury	944	0	0	0	0
F.J. McLain	418	79	26	105	77
Mears	50	180	0	180	180
Mitchell	264	270	0	270	270
Muskallonge Lake	211	179	0	179	179
Muskegon	1,165	322	28	350	322
Negwegon	1,681	0	0	0	0
Newaygo	257	0	99	99	0
North Higgins Lake	429	218	0	218	218
Onaway	148	103	0	103	103
Orchard Beach	201	175	0	175	175
Otsego Lake	62	210	0	210	203
Palms Book	388	0	0	0	0
Petoskey	298	190	0	190	190
Porcupine Mountains Wilderness	59,015	183[d]	16	199	95
Port Crescent	569	183	0	183	182
Saugatuck Dunes	909	0	0	0	0
Seven Lakes	1,426	0	0	0	0
Silver Lake	2,796	249	0	249	249
Sleeper	723	280	0	280	280
Sleepy Hollow	2,678	181	0	181	181
South Higgins Lake	962	512	0	512	512
Sterling	1,035	288	0	288	286
Straits	181[e]	322	0	322	322
Sturgeon Point	70	0	0	0	0
Tahquamenon Falls	36,577	259	60	319	259
Tawas Point	175	210	0	210	210
Thompson Harbor	5,029	0	0	0	0
Traverse City	45	344	0	344	344
Twin Lakes	175	62	0	62	62
Van Buren	326	220	0	220	220
Van Riper	1,124	151	75	226	151
Warren Dunes	1,522	197	0	197	197
J.W. Wells	650	176	0	176	176
Wilderness	7,580	210	0	210	210
Wilson	36	160	0	160	160
Young	563	294	0	294	294
Subtotal	167,158	11,756	615	12,371	11,423

Table 13-1. Acreages of and number of campsites in units of Michigan's state park system, continued.

UNIT	ACRES As of 10/1/89	NUMBER OF CAMPSITES[a]			NO. CAMPSITES WITH ELECTRICITY[a]
		Modern	Rustic	Total	
UNITS MANAGED BY MDNR PARKS DIVISION, CONT'D					
STATE RECREATION AREAS (17 units)					
Bald Mountain	4,582	0	0	0	0
Brighton	4,909	150	73	223	150
Fort Custer	2,962	55	55	110	0
Highland	5,700	0	39	39	0
Holly	7,581	161[c]	0	161	80
Ionia	4,079	0	0	0	0
Island Lake	3,978	20[c]	27	47	0
Lake Hudson	2,696	0	50	50	0
Metamora-Hadley	722	220	0	220	220
Ortonville	4,454	0	32	32	0
Pinckney	10,816	220	35	255	220
Pontiac Lake	3,711	176[c]	0	176	81
Proud Lake	3,616	130	0	130	130
Rifle River	4,449	80	101	181	80
Rochester-Utica	1,352	0	0	0	0
Waterloo	19,839	374	25	399	374
Yankee Springs	5,037	220	120	340	213
Subtotal	90,483	1,806	557	2,363	1,548
STATE TRAILS (2 units)					
Hart-Montague Trail	188	0	0	0	0
Kal-Haven Trail	483	0	0	0	0
Subtotal	671	0	0	0	0
STATE SCENIC AND HISTORIC SITES (3 units)					
Laughing Whitefish Falls Scenic Site	960	0	0	0	0
Sanilac Petroglyphs Historic Site	238	0	0	0	0
Wagner Falls Scenic Site	23	0	0	0	0
Subtotal	1,221	0	0	0	0
OTHER UNADMINISTERED UNITS (8 units)					
Coldwater Lake	413	0	0	0	0
Gladwin Recreation Area	365	0	0	0	0
Lakelands Trail	30	0	0	0	0
Meridian-Baseline Historic State Park	87	0	0	0	0
Oakland-Rec. Trail	6	0	0	0	0
Old Mission Point	513	0	0	0	0
Walter C. Wetzel State Park	889	0	0	0	0
Warren Woods	312	0	0	0	0
Subtotal	2,615	0	0	0	0
TOTAL, UNITS MANAGED BY MDNR PARKS DIVISION	262,148	13,562	1,172	14,734	12,971
UNITS MANAGED BY MACKINAC ISLAND STATE PARK COMMISSION (3 units)					
Fort Michilimackinac State Historic Park	25	0	0	0	0
Mackinac Island State Park	1,773	0	0	0	0
Mill Creek State Historic Park	625	0	0	0	0
Total	2,423	0	0	0	0
GRAND TOTAL, MICHIGAN STATE PARK SYSTEM	264,571	13,562	1,172	14,734	12,971

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[a] 1988 data. Figures do not include organization, horseman's, or backcounty campsites.

[b] Includes 95 semi-modern campsites.

[c] Semi-modern campsites.

[d] Includes 88 semi-modern campsites.

[e] Includes acreage of the Father Marquette National Memorial and Museum.

SOURCE: Michigan Department of Natural Resources.

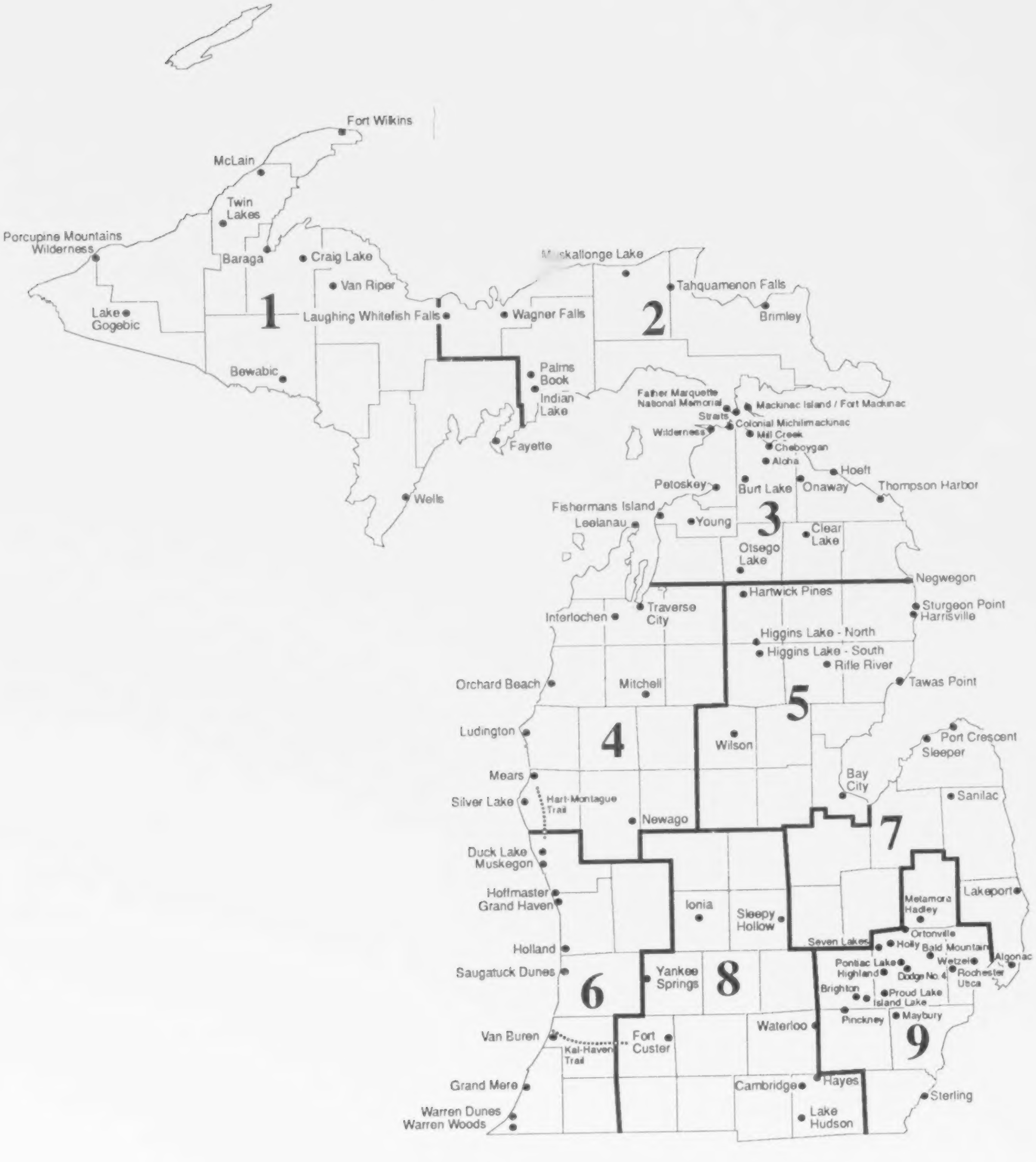
Fort Wilkins
McLain
Twin Lakes
Porcupine Mountains Wilderness
Baraga
Craig Lake
Van Riper
Lake Gogebic
1
Laughing Whitefish Falls
Wagner Falls
Bewabic
Muskallonge Lake
Tahquamenon Falls
2
Brimley
Palms Book
Indian Lake
Fayette
Wells
Father Marquette National Memorial
Mackinac Island / Fort Mackinac
Straits
Colonial Michilimackinac
Wilderness
Mill Creek
Cheboygan
Aloha
Hoeft
Petoskey
Burt Lake
Onaway
Thompson Harbor
Fishermans Island
Leelanau
Young
3
Clear Lake
Otsego Lake
Negwegon
Hartwick Pines
Sturgeon Point
Harrisville
Traverse City
Interlochen
Higgins Lake - North
Higgins Lake - South
Rifle River
Orchard Beach
Mitchell
Tawas Point
5
Ludington
4
Wilson
Port Crescent
Sleeper
Mears
Bay City
Silver Lake
Hart-Montague Trail
Sanilac
Newago
7
Duck Lake
Muskegon
Hoffmaster
Grand Haven
Ionia
Sleepy Hollow
Metamora Hadley
Lakeport
Holland
Seven Lakes
Ortonville
Holly
Bald Mountain
Algonac
Pontiac Lake
Highland
Wetzel
Dodge No. 4
Rochester Utica
Saugatuck Dunes
Yankee Springs
8
6
Brighton
Proud Lake
Island Lake
Pinckney
Maybury
Van Buren
Fort Custer
Waterloo
9
Kal-Haven Trail
Grand Mere
Cambridge
Hayes
Sterling
Warren Dunes
Warren Woods
Lake Hudson

Figure 13-1. Units of the Michigan state park system and boundaries of state park planning regions in Michigan.

Table 13-2. Size of and number of modern campsites in the nation's state park systems, FY1988-89.[a]

RANK	STATE	NO. OPERATIONAL STATE PARKS	RANK	STATE	TOTAL ACREAGE	RANK	STATE	NO. MODERN CAMPSITES[b]
1	OR	173	1	AK	2,764,649	1	■ MI	13,562
2	NY	122	2	CA	968,816	2	CA	9,093
3	PA	104	3	PA	272,762	3	NY	8,570
4	OH	72	4	NY	235,700	4	WA	6,453
5	■ MI	70[c]	5	OH	207,682	5	OR	5,415
5	IA	70	6	MN	200,000	6	OH	4,850
6	CA	67	7	TX	175,770	7	PA	4,512
6	TX	67	8	FL	173,969	8	IN	4,306
7	IL	66	9	■ MI	169,581[c]	9	TX	4,180
8	MN	64	10	IL	120,861	10	IA	4,086
9	OK	59	11	NM	118,951	11	MN	3,860
10	WI	52	12	UT	115,533	12	WI	3,629
11	WA	46	13	WY	112,359	13	MA	3,442
12	UT	45	14	MO	107,106	14	TN	2,945
12	MO	45	15	CO	103,163	15	FL	2,924
13	GA	44	16	OK	94,549	16	SC	2,781
14	SC	41	17	OR	89,935	17	NE	2,776
15	MA	40	18	TN	87,906	18	OK	2,755
16	CT	39	19	NV	83,848	19	GA	2,718
16	NM	39	20	SD	79,136	20	MD	2,640
17	AK	37	21	SC	76,655	21	KY	2,514
18	WV	34	22	WI	70,697	22	AL	2,458
19	TN	33	23	WV	70,556	23	CO	2,450
20	FL	32	24	NC	68,517	24	KS	2,286
21	VT	30	25	NJ	67,355	25	VT	2,219
21	NJ	30	26	WA	63,457	26	SD	2,057
22	NC	29	27	IN	56,726	27	MS	1,508
23	VA	24	28	MD	54,591	28	MO	1,483
24	AL	23	29	GA	54,307	29	AR	1,442
24	KS	23	30	AL	48,985	30	NC	1,436
25	MS	22	31	VA	41,734	31	NJ	1,427
26	NH	21	32	IA	37,955	32	VA	1,406
27	RI	20	33	MA	31,739	33	WV	1,360
28	IN	19	34	KS	30,214	34	CT	1,274
29	HI	17	35	NE	29,818	35	RI	1,129
30	KY	15	36	AR	27,938	36	LA	1,077
31	LA	14	37	VT	27,141	37	UT	1,076
32	SD	12	38	LA	26,451	38	ID	915
32	ME	12	39	KY	26,029	39	ND	804
33	NV	11	40	MS	22,552	40	AZ	726
33	CO	11	41	CT	21,906	41	DE	713
34	WY	10	42	HI	21,746	42	NM	701
34	DE	10	43	ME	20,739	43	NV	488
34	AR	10	44	MT	17,549	44	HI	75
34	ND	10	45	NH	11,744	45	IL	51
35	MT	9	46	DE	10,521	--	ME	N.A.
35	MD	9	47	RI	8,063	--	MT	N.A.
36	NE	6	48	ND	7,675	--	NH	N.A.
--	AZ	N.A.	--	AZ	N.A.	--	AK	N.A.
--	ID	N.A.	--	ID	N.A.	--	WY	N.A.

NOTE: Figures pertain only to land areas designated as state parks and do not include state recreation areas, state forests, state natural areas, state historic areas, water use areas, environmental education areas, state trails, or other areas managed by state park agencies.

[a] July 1, 1988 through June 30, 1989.

[b] Includes both seasonal and year-round modern campsites. Michigan figure is a revision of that which appeared in the source document.

[c] Includes state parks operated by both Parks Division and Mackinac Island State Park Commission. Source document included only state parks operated by Parks Division.

SOURCES: National Association of State Park Directors. n. d. Annual Information Exchange 1990. Comprehensive Planning Branch, Texas Parks and Wildlife Department. Austin.

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Table 13-3. Estimated visitation to the nation's state park systems, FY1988-89.[a]

Rank	State	No. Day Visits	Rank	State	No. Overnight Visits	Rank	State	Total No. Visits[b]
1	CA	70,919,520	1	CA	6,387,009	1	CA	77,306,529
2	OH	63,215,624	2	■ MI	5,607,224[c]	2	OH	65,570,898
3	NY	53,043,000	3	GA	3,587,791	3	NY	56,056,000
4	WA	38,459,416	4	NY	3,013,000	4	WA	40,636,994
5	OR	36,926,000	5	NM	2,647,106	5	OR	39,030,076
6	IL	34,920,289	6	OH	2,355,274	6	PA	36,324,219
7	PA	34,753,666	7	TX	2,323,784	7	IL	35,451,731
8	KY	25,189,030	8	OK	2,270,028	8	KY	26,191,500
9	TN	24,964,435	9	WA	2,177,578	9	TN	26,060,007
10	■ MI	19,540,122[c]	10	OR	2,104,076	10	■ MI	25,147,346[c]
11	TX	18,503,881	11	KS	1,772,270	11	TX	20,827,665
12	HI	17,254,025	12	IN	1,609,880	12	HI	17,339,661
13	OK	14,546,519	13	PA	1,570,553	13	OK	16,816,547
14	FL	14,113,482	14	WI	1,343,732	14	FL	15,147,313
15	MO	13,350,346	15	NE	1,296,427	15	MO	14,375,073
16	MA	13,234,744	16	TN	1,095,572	16	GA	14,351,164
17	GA	10,763,373	17	SC	1,067,175	17	MA	14,133,168
18	IA	10,275,939	18	FL	1,033,831	18	WI	11,563,257
19	WI	10,219,525	19	MO	1,024,727	19	IA	10,767,234
20	NJ	10,164,221	20	AL	1,004,467	20	NJ	10,619,589
21	MD	8,550,784	21	KY	1,002,470	21	IN	9,397,235
22	CT	8,254,395	22	MA	898,424	22	MD	8,907,067
23	WV	8,019,097	23	MN	807,285	23	WV	8,766,955
24	IN	7,787,355	24	WV	747,858	24	NE	8,739,234
25	NC	7,576,815	25	AR	652,684	25	CT	8,612,357
26	CO	7,523,930	26	AK	633,420	26	SC	8,392,055
27	NE	7,442,807	27	MS	584,654	27	NC	7,938,210
28	SC	7,324,880	28	MT	558,900	28	CO	7,911,598
29	MN	6,879,815	29	IL	531,442	29	MN	7,687,100
30	AR	6,007,377	30	UT	493,644	30	AR	6,660,061
31	RI	5,978,503	31	IA	491,295	31	RI	6,166,839
32	SD	5,087,148	32	NJ	455,368	32	AL	5,775,118
33	AK	4,886,392	33	VA	453,893	33	AK	5,519,812
34	AL	4,770,651	34	WY	449,537	34	SD	5,470,169
35	UT	4,399,916	35	CO	387,668	35	KS	5,109,470
36	NH	4,241,000	36	SD	383,021	36	UT	4,893,560
37	MS	3,800,147	37	VT	379,683	37	NM	4,825,752
38	MT	3,636,300	38	NC	361,395	38	NH	4,439,100
39	VA	3,418,767	39	CT	357,962	39	MS	4,384,801
40	KS	3,337,200	40	MD	356,283	40	MT	4,195,200
41	NV	2,811,826	41	AZ	321,311	41	VA	3,872,660
42	NM	2,178,646	42	LA	295,376	42	NV	2,980,826
43	ME	2,000,107	43	ID	228,813	43	ME	2,217,331
44	ID	1,901,491	44	ME	217,224	44	ID	2,130,304
45	AZ	1,696,151	45	NH	198,100	45	AZ	2,017,462
46	DE	1,547,888	46	DE	194,335	46	WY	1,798,146
47	WY	1,348,609	47	RI	188,336	47	DE	1,742,223
48	ND	875,560	48	NV	169,000	48	LA	1,027,708
49	LA	732,332	49	ND	130,715	49	ND	1,006,275
50	VT	602,647	50	HI	85,636	50	VT	982,330
	Total	668,535,010		Total	58,307,236		Total	726,842,246

[a] July 1, 1988 through June 30, 1989.

[b] Equals the sum of day visits and overnight visits.

[c] Equals sum of visits to facilities operated by the MDNR Parks Division (including the Ralph A. MacMullen Conference Center) and attractions operated by the Mackinac Island State Park Commission.

SOURCES: National Association of State Park Directors. n. d. Annual Information Exchange 1990. Comprehensive Planning Branch, Texas Parks and Wildlife Department. Austin.

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Table 13-4. Selected financial aspects of the nation's state park systems, FY1988-89.[a]

RANK	STATE	STATE LEGISLATIVE APPROPRIATION TO OPERATING BUDGET[b]	RANK	STATE	TOTAL OPERATING BUDGET	RANK	STATE	PERCENTAGE OF GOVERNMENT BUDGET SPENT ON STATE PARKS	RANK	STATE	TOTAL FIXED CAPITAL OUTLAY BUDGET
1	NY	$99,287,000	1	CA	$150,329,000	1	WV	1.1950	1	IL	$87,117,000
2	CA	79,245,000	2	NY	106,341,000	2	OK	0.9983	2	CA	67,953,000
3	FL	36,019,564	3	KY	53,724,800	3	NY	0.9579	3	OH	40,500,000
4	PA	32,700,000	4	OH	41,197,279	4	CA	0.8825	4	MA	33,000,000
5	OH	28,269,942	5	PA	39,700,000	5	KY	0.7166	5	TX	27,187,009
6	IL	27,474,500	6	TX	37,979,801	6	NH	0.5706	6	NY	25,836,000
7	NJ	22,836,000	7	FL	36,019,564	7	DE	0.4719	7	MD	20,262,000
8	WA	19,739,058	8	TN	33,116,900	8	SD	0.4717	8	SC	17,577,958
9	KY	18,703,700	9	IL	27,474,500	9	AL	0.4581	9	WA	17,438,083
10	MA	18,702,456	10	WA	25,029,050	10	TN	0.4478	10	HI	15,890,400
11	TX	18,118,236	11	AL	24,738,998	11	AR	0.4435	11	MO	10,772,290
12	TN	16,685,100	12	■ MI	24,491,388[c]	12	UT	0.4393	12	VA	9,605,150
13	MD	14,119,768	13	NJ	23,857,657	13	NE	0.4238	13	RI	9,014,393
14	OK	13,856,957	14	GA	22,519,934	14	PA	0.3596	14	FL	8,112,000
15	GA	11,102,821	15	OK	19,965,133	15	GA	0.3519	15	NH	8,070,236
16	VA	9,409,608	16	MA	19,787,700	16	RI	0.3350	16	DE	7,780,000
17	MN	9,378,600	17	MD	19,576,654	17	VT	0.3235	17	WI	7,738,836
18	CT	7,800,000	18	OR	19,400,000	18	WA	0.3122	18	CT	7,378,100
19	■ MI	7,099,900[c]	19	WV	17,504,420	19	NM	0.2993	19	NJ	5,290,000
20	AR	7,047,970	20	AR	17,320,341	20	OR	0.2985	20	IN	5,080,000
21	IA	6,849,292	21	MO	16,072,895	21	KS	0.2754	21	CO	4,852,760
22	WI	6,716,834	22	CT	15,600,000	22	ME	0.2680	22	AZ	3,591,868
23	AZ	6,014,958	23	SC	14,785,049	23	NV	0.2563	23	TN	3,230,000
24	WV	5,869,135	24	MN	13,323,000	24	IA	0.2537	24	■ MI	2,985,000[c]
25	LA	5,628,590	25	IN	11,999,976	25	MN	0.2467	25	KY	2,958,522
26	UT	5,619,399	26	WI	11,321,636	26	MT	0.2257	26	AK	2,750,000
27	HI	5,539,047	27	UT	11,043,227	27	MO	0.2252	27	MN	2,567,000
28	NC	5,359,501	28	MS	9,887,165	28	WI	0.2234	28	SD	2,379,203
29	SC	5,282,441	29	CO	9,460,880	29	OH	0.2217	29	NC	2,168,314
30	MS	4,942,545	30	VA	9,459,608	30	WY	0.2189	30	NE	2,118,421
31	RI	4,805,931	31	IA	8,304,000	31	CO	0.2128	31	GA	1,989,549
32	AK	4,253,800	32	NH	7,752,492	32	HI	0.2066	32	NV	1,210,340
33	OR	4,200,000	33	NM	7,612,472	33	SC	0.2018	33	KS	1,173,415
34	MO	4,196,196	34	NC	6,826,703	34	AZ	0.1999	34	UT	1,005,665
35	ME	3,797,197	35	NE	6,585,445	35	AK	0.1993	35	ID	970,711
36	IN	3,721,523	36	AZ	6,395,727	36	MD	0.1983	36	AR	932,481
37	WY	3,480,573	37	HI	5,714,293	37	TX	0.1974	37	IA	900,000
38	NM	3,265,900	38	LA	5,668,096	38	FL	0.1944	38	LA	885,000
39	NE	3,153,581	39	KS	5,406,725	38	ID	0.1944	39	OK	798,784
40	CO	3,064,400	40	SD	5,010,813	39	NJ	0.1927	40	ND	619,672
41	KS	3,042,387	41	DE	4,928,064	40	MS	0.1826	41	MS	524,193
42	NV	1,966,177	42	RI	4,805,931	41	MA	0.1597	42	NM	500,000
43	SD	1,921,929	43	AK	4,784,100	42	■ MI	0.1566[c]	43	VT	410,000
44	ID	1,741,821	44	VT	3,937,127	43	IN	0.1486	44	OR	392,000
45	DE	1,621,572	45	NV	3,844,875	44	ND	0.1291	45	ME	320,000
46	AL	1,541,006	46	ME	3,797,197	45	CT	0.1233	46	WV	193,515
47	ND	1,109,441	47	WY	3,480,573	46	IL	0.1215	47	PA	147,300
48	NH	842,862	48	ID	3,040,710	47	NC	0.1092	48	AL	140,744
49	VT	758,876	49	MT	2,475,600	48	LA	0.1090	49	MT	N.A.
50	MT	N.A.	50	ND	1,807,289	49	VA	0.0831	50	WY	N.A.
	Total	N.A.		Total	$982,130,499		Avg.	0.3017		Total	N.A.

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[a] July 1, 1988 through June 30, 1989.

[b] Includes "appropriation-general fund," "general fund," "legislative appropriations-general revenues, "legislative appropriations," "state funds," and "cash funds." Many state legislatures also appropriate funds to the fixed capital outlay budgets of their respective state park systems.

[c] Accounts for both MDNR Parks Division and Mackinac Island State Park Commission appropriations/budgets.

SOURCES: National Association of State Park Directors. n. d. Annual Information Exchange 1990. Comprehensive Planning Branch, Texas Parks and Wildlife Department. Austin.

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did Michigan's legislature. In particular, legislative appropriations to state park operating budgets in Illinois and Ohio were more than three times the Michigan legislature's appropriation to Michigan's state park operating budget.

Utilization of the System

The Parks Division produces a wealth of statistics on attendance at its various parks and recreation areas. The most useful statistics for understanding trends and patterns in state park visitation, however, are those on the number of overnight stays in and camper- and day-visits to each of its administered units. The statistics on camper-visits and day-visits, while useful, are rough estimates rather than actual counts of visits. Estimates of day-visits are made by multiplying vehicle counts by an average value for persons per vehicle and then adding the number of persons who walked into the park. Vehicle counts are obtained from automatic traffic counter data, counts made at public contact booths, or counts of the number of vehicles in parking lots multiplied by a factor of three to account for vehicle turnover. Estimates of camper-visits are made by multiplying the number of camping parties camping in the park on a given day by an average value for number of persons per camping party. Estimates of the total number of visits to the parks are made by summing estimated day-visits and estimated camper-visits. Statistics on overnight stays are actual counts based on daily tours of campgrounds. Consequently, they are the most accurate statistics available on state park visitation.

Attendance figures for each administered unit under the control of the Parks Division are presented in Tables 13-5 through 13-12. Figures on individual parks as well as the system as a whole are provided since such figures are useful indicators of tourist flows in specific locales, particularly in the case of towns that are dependant on the tourist traffic to a specific state park for their economic well-being. Annual attendance figures for FY1982-83 through FY1989-90 are presented in Tables 13-5 through 13-8 to provide an indication of visitation trends; monthly attendance figures for 1989 are presented in Tables 13-9 through 13-12 to document the seasonality of visitation to each park. Because the Parks Division collects and reports visitation data for 7-day "weeks" that begin on a Monday and end on a Sunday, the monthly attendance statistics in Tables 13-9 through 13-12 were developed by aggregating the reported "weekly" figures into "monthly" figures in such a manner that the time periods to which these aggregated figures pertained would correspond as closely as possible with calendar months. Thus the statistics reported for "February," for example, actually pertain to the period January 30, 1989 through February 26, 1989. The beginning or ending dates for a given month usually varied from the true dates by one or two days and never by more than 3 days.

Statistics on visitation to the state park system as a whole indicate that from FY1982-83 through FY1989-90 camping activity remained relatively static at the level of about a million overnight stays per year and between 5.1 and 5.4 million estimated camper-visits per year (Tables 13-5 and 13-6). Estimated day-visits, on the other hand, were more variable, climbing steadily from a low of 17.0 million in FY1983-84 to a high of 19.9 million in FY1987-88 and then declining over the next two years to 17.3 million in FY1989-90 (Table 13-7). Because day-visits constitute the bulk of total visits to the parks, a similar trend occurred with respect to estimated total visits. The latter rose steadily from a low of 22.3 million in FY1983-84 to a high of 25.3 million in 1987-88, and then fell over the next two years to 22.5 million visits in FY1989-90 (Table 13-8).

The information in Table 13-8 also identifies Holland, Grand Haven, Warren Dunes, and Sterling State Parks as the most heavily visited units in the system. Each of these parks had estimated total attendance in excess of a million visits in FY1989-90, is located in the Southern Lower Peninsula near a large city, and provides a swimming beach on one of the Great Lakes.

Table 13-5. Number of overnight stays in Michigan state parks and recreation areas that provide camping, FY1983-FY1990.

STATE PARK OR RECREATION AREA	FISCAL YEAR (OCTOBER 1 THROUGH SEPTEMBER 30)							
	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90
UPPER PENINSULA								
Baraga	3,910	3,883	3,554	3,564	4,594	4,728	5,026	4,988
Bewabic	4,156	3,789	4,423	4,650	4,819	5,603	6,016	5,875
Brimley	15,938	13,954	13,370	13,116	18,002	20,781	20,538	20,480
Craig Lake	0	0	0	0	0	207	220	233
Fayette	4,106	3,512	3,588	3,606	4,242	4,762	4,744	4,488
Fort Wilkins	9,550	8,937	9,348	9,587	11,610	11,030	10,792	10,698
Indian Lake	13,049	12,500	12,603	13,257	15,233	16,516	16,511	16,091
Lake Gogebic	5,212	4,771	4,177	4,546	5,235	5,988	5,679	5,793
Mc Lain	8,314	7,474	8,389	6,649	8,245	8,438	8,631	8,764
Muskallonge Lake	9,388	8,952	9,365	9,399	11,550	11,517	11,123	10,802
Porcupine Mountains	19,380	14,485	15,896	16,613	18,890	17,428	17,664	11,859
Straits	25,303	24,014	22,829	23,315	26,560	27,070	27,215	24,122
Tahquamenon Falls	18,603	18,056	17,792	18,242	20,448	21,377	21,022	21,903
Twin Lakes	2,293	2,160	2,163	2,267	3,698	4,387	3,376	4,301
Van Riper	8,335	7,709	7,397	7,769	9,081	9,999	10,189	10,850
Wells	7,409	7,206	6,863	6,662	8,167	9,950	9,219	8,670
Total	154,946	141,402	141,757	143,242	170,374	179,781	177,965	169,917
NORTHERN LOWER PENINSULA								
Aloha	19,205	19,627	18,598	19,163	19,714	21,380	20,700	20,182
Bay City	9,546	10,104	11,038	12,248	14,193	13,905	15,133	15,034
Burt Lake	24,735	23,885	22,771	22,847	24,777	25,912	25,080	24,545
Cheboygan	2,667	2,846	3,003	3,099	3,502	3,984	3,992	3,947
Clear Lake	5,940	5,960	6,996	7,925	9,218	9,477	10,155	10,271
Fishermans Island	4,992	4,697	4,797	4,292	5,546	5,909	5,856	6,173
Gladwin	4	0	0	0	0	0	0	0
Harrisville	18,572	17,140	16,107	15,965	16,218	18,153	18,306	17,043
Hartwick Pines	6,066	6,003	5,860	6,155	6,440	6,206	6,576	6,628
Higgins Lake - North	16,330	14,718	14,386	14,551	16,162	16,466	16,737	16,233
Higgins Lake - South	37,139	36,592	36,548	36,764	38,052	38,120	36,588	38,896
Hoeft	6,379	5,665	5,473	6,047	8,119	10,247	9,662	8,829
Interlochen	32,702	31,845	30,912	31,201	32,337	33,287	32,433	30,606
Leelanau	5,227	5,903	5,908	5,670	6,502	6,161	4,923	4,481
Ludington	47,755	48,907	47,326	39,931	45,063	44,913	43,092	43,206
Mears	16,147	16,371	17,257	16,934	18,086	18,553	18,314	17,902
Mitchell	27,167	27,296	26,445	25,655	28,325	28,667	27,672	28,533
Negwegon	0	0	0	0	0	0	0	0
Newaygo	3,619	3,331	4,035	4,243	6,254	5,422	4,853	3,488
Onaway	4,811	4,923	4,674	5,073	5,393	6,064	5,749	5,882
Orchard Beach	14,091	14,166	13,720	14,225	15,405	16,008	15,322	14,394
Otsego Lake	14,826	15,051	14,614	14,832	15,908	15,531	15,964	16,280
Petoskey	9,262	9,231	8,661	11,607	15,739	17,140	16,886	16,349
Rifle River	12,388	12,910	12,832	13,003	14,108	13,483	13,671	14,133
Silver Lake	19,749	19,689	18,721	17,768	18,655	18,184	17,356	17,901

Tawas Point	15,942	15,181	14,410	13,995	15,575	17,638	18,224	18,007
Traverse City	30,065	29,760	29,499	29,587	30,921	32,403	32,591	28,867
White Cloud	5	0	0	0	0	0	0	0
Wilderness	18,242	18,265	17,870	17,167	18,954	19,277	18,892	18,212
Wilson	10,638	10,752	10,368	10,569	10,974	11,039	11,394	11,375
Young	21,614	20,907	20,622	19,381	19,609	21,886	22,246	21,939
Total	455,825	451,725	443,451	439,897	479,749	495,415	488,367	479,336
SOUTHERN LOWER PENINSULA								
Algonac	22,311	23,845	26,170	25,170	27,890	29,384	29,219	30,498
Bald Mountain	71	68	56	36	46	51	29	26
Brighton	9,937	10,871	11,568	13,552	14,280	13,461	14,159	11,522
Duck Lake	0	0	0	0	0	1,775	0	0
Fort Custer	4,384	6,593	4,843	5,846	8,538	8,779	7,535	8,080
Grand Haven	16,417	16,852	17,731	18,031	21,170	20,627	22,106	19,681
Grand Mere	0	0	0	0	0	0	0	0
Hayes	14,492	14,715	14,282	14,611	15,671	15,855	14,292	13,870
Highland	1,675	2,009	3,108	3,651	4,072	12,190	1,603	997
Hoffmaster	29,370	30,454	29,856	29,389	37,937	39,169	37,420	32,300
Holland	33,790	34,583	34,667	32,986	33,622	33,834	32,595	33,564
Holly	8,806	9,787	10,102	12,128	12,533	12,481	12,705	14,465
Ionia	265	287	567	1,171	1,466	2,709	2,774	1,956
Island Lake	1,554	4,151	2,908	2,411	2,660	2,867	2,181	2,446
Kal-Haven	0	0	0	0	0	0	0	0
Lake Hudson	0	0	0	0	0	130	384	543
Lakeport	30,980	21,373	20,709	20,008	20,725	21,825	21,445	22,347
Maybury	49	91	48	37	35	48	77	76
Metamora-Hadley	16,568	17,029	16,481	16,869	17,024	16,583	15,463	16,246
Muskegon	24,164	24,440	24,807	24,955	25,914	24,930	26,009	24,266
Ortonville	2,097	1,268	1,230	1,461	1,525	1,834	1,466	1,286
Pinckney	17,564	18,634	17,661	19,785	24,614	27,019	24,035	26,968
Pontiac Lake	1,325	1,609	3,934	4,220	4,242	3,207	2,964	2,914
Port Crescent	17,041	17,057	16,806	16,696	18,333	18,176	18,256	19,066
Proud Lake	10,392	11,296	14,155	16,843	22,183	20,015	12,368	11,235
Rochester-Utica	2	4	3	5	4	1	6	14
Sleeper	16,243	16,704	16,242	15,971	17,534	18,741	18,582	18,820
Sleepy Hollow	70	569	1,099	1,456	1,622	5,200	5,148	6,301
Sterling	14,676	13,247	15,157	16,525	20,776	23,759	20,728	20,577
Van Buren	15,383	15,673	21,688	14,451	14,413	14,752	13,590	14,722
Warren Dunes	20,757	20,889	21,417	19,052	20,010	20,319	18,526	18,341
Waterloo	27,248	27,345	25,279	20,906	25,213	21,629	22,482	22,925
Yankee Springs	23,659	24,840	26,046	23,910	27,364	27,022	27,013	27,417
Total	381,290	386,283	398,620	392,132	441,416	458,372	425,160	423,469
STATEWIDE	992,061	979,410	983,828	975,271	1,091,539	1,133,568	1,091,492	1,072,722

NOTE: An overnight stay is the passage of one night by a camping party in a campground or backcountry area. Figures do not include overnight stays in cabins. Gladwin and White Cloud units are no longer operated by the MDNR.

SOURCE: Michigan Department of Natural Resources, Parks Division.

Table 13-6. Estimated number of camper-visits to Michigan state parks and recreation areas that provide camping, FY1983-FY1990.

STATE PARK OR RECREATION AREA	FISCAL YEAR (OCTOBER 1 THROUGH SEPTEMBER 30)							
	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90
UPPER PENINSULA								
Baraga	26,432	26,744	23,405	23,514	25,693	25,937	27,503	26,917
Bewabic	24,771	24,076	28,004	27,585	25,481	29,032	30,995	30,144
Brimley	95,125	83,848	84,837	87,851	93,907	102,804	98,285	95,621
Craig Lake	0	0	0	0	0	640	705	874
Fayette	27,896	24,886	26,606	26,688	27,203	28,795	28,792	26,994
Fort Wilkins	60,699	58,000	60,379	61,069	59,494	59,527	55,305	57,400
Indian Lake	80,478	77,236	79,674	80,885	80,881	85,438	83,260	81,381
Lake Gogebic	30,697	27,737	25,466	27,728	28,105	32,077	30,404	30,805
Mc Lain	48,660	43,360	42,204	41,296	44,406	41,724	43,500	43,000
Muskallonge Lake	50,055	47,529	54,619	50,590	53,748	54,250	52,198	50,271
Porcupine Mountains	102,881	93,176	95,405	95,688	97,164	99,033	100,003	63,659
Straits	161,037	152,123	143,981	147,481	148,370	141,092	147,137	129,643
Tahquamenon Falls	117,133	115,008	118,220	115,240	115,907	118,787	114,785	109,927
Twin Lakes	14,007	13,146	12,401	12,460	13,108	15,589	15,226	15,126
Van Riper	57,976	53,556	48,327	47,979	50,663	55,789	60,156	60,804
Wells	48,896	47,361	45,607	43,424	46,389	55,710	49,260	46,031
Total	946,743	887,786	889,135	889,478	910,519	946,224	937,514	868,597
NORTHERN LOWER PENINSULA								
Aloha	96,691	98,490	95,721	92,729	84,480	85,833	88,168	86,640
Bay City	61,064	64,773	69,524	75,898	78,091	75,674	80,300	82,076
Burt Lake	132,278	114,467	121,354	118,385	116,466	108,078	116,397	113,221
Cheboygan	17,460	18,733	19,755	19,276	19,138	21,614	21,268	21,010
Clear Lake	30,453	30,469	35,107	40,251	41,725	43,322	45,847	46,821
Fishermans Island	31,447	30,076	30,487	26,003	29,343	30,592	29,601	31,182
Gladwin	16	0	0	0	0	0	0	0
Harrisville	97,348	90,949	83,765	84,994	77,248	83,853	83,862	78,491
Hartwick Pines	38,305	38,911	36,694	38,840	36,520	35,232	36,601	36,760
Higgins Lake - North	85,571	84,448	83,229	67,831	60,151	59,320	72,110	71,930
Higgins Lake - South	183,145	182,063	182,381	182,869	169,907	171,938	176,362	169,600
Hoeft	34,682	32,981	33,964	33,223	40,244	48,019	46,066	41,855
Interlochen	168,443	162,976	159,268	158,107	165,993	167,191	149,040	160,732
Leelanau	31,295	34,108	33,922	33,840	33,938	33,008	25,648	23,719
Ludington	270,438	271,016	236,865	201,836	190,929	200,573	199,843	195,149
Mears	79,764	81,336	87,644	85,279	81,817	83,990	81,048	79,613
Mitchell	140,191	140,036	134,866	132,358	132,369	121,955	128,189	131,299
Negwegon	0	0	0	0	0	0	565	0
Newaygo	19,284	19,448	20,223	21,879	22,736	24,669	23,139	18,383
Onaway	25,066	25,269	25,745	26,056	24,898	27,832	26,426	26,789
Orchard Beach	81,286	81,620	71,185	76,405	78,082	74,846	72,676	68,735
Otsego Lake	87,537	81,235	77,685	79,783	72,082	77,319	72,506	73,567
Petoskey	50,930	52,315	48,763	67,447	78,335	84,282	82,779	79,544
Rifle River	70,154	71,284	73,026	71,749	69,273	66,198	67,421	67,171
Silver Lake	104,899	104,534	107,012	102,036	96,087	94,812	90,583	91,840

Tawas Point	85,145	81,341	80,745	78,242	77,152	85,475	87,636	86,082
Traverse City	176,434	174,452	172,486	172,298	159,393	163,684	168,488	150,433
White Cloud	10	0	0	0	0	0	0	0
Wilderness	102,433	103,012	100,552	96,164	95,519	95,220	92,149	88,645
Wilson	59,952	55,720	58,824	59,305	56,110	55,450	58,400	58,522
Young	108,350	104,110	101,735	95,893	88,243	98,606	97,196	95,551
Total	2,470,071	2,430,172	2,382,527	2,338,976	2,276,269	2,318,585	2,320,314	2,275,360
SOUTHERN LOWER PENINSULA								
Algonac	115,462	123,678	109,489	103,542	103,268	109,706	108,133	112,870
Bald Mountain	0	0	717	975	1,105	1,306	587	4,994
Brighton	57,647	61,802	64,139	63,993	69,511	64,735	68,498	57,424
Duck Lake	0	0	0	0	0	9,662	0	0
Fort Custer	17,961	22,155	28,477	24,180	32,861	42,630	41,478	45,377
Grand Haven	80,453	83,983	86,581	87,635	92,561	93,459	88,991	92,423
Grand Mere	0	0	0	0	0	0	0	1,010
Hayes	85,901	86,565	82,274	85,829	83,381	83,305	74,863	74,074
Highland	11,756	12,210	18,251	20,253	22,837	123,210	10,187	6,197
Hoffmaster	148,076	155,594	153,363	149,546	144,814	147,556	140,513	142,991
Holland	171,138	171,030	171,565	166,493	153,917	156,017	143,256	152,791
Holly	36,767	41,165	40,921	49,446	50,005	50,000	42,490	58,469
Ionia	1,119	1,138	2,423	6,116	8,490	10,476	11,090	11,503
Island Lake	10,253	17,254	13,405	14,389	13,740	15,143	11,667	13,285
Kal-Haven	0	0	0	0	0	0	144	0
Lake Hudson	0	0	0	0	0	800	2,185	3,058
Lakeport	127,436	121,093	121,451	117,907	109,059	114,992	110,680	117,038
Maybury	956	850	1,357	550	570	1,232	1,073	1,277
Metamora-Hadley	89,953	92,814	91,225	90,350	82,898	69,050	76,304	82,116
Muskegon	99,579	100,563	135,805	117,428	120,267	123,071	123,360	120,049
Ortonville	8,246	8,641	7,985	8,774	8,158	9,955	7,338	7,324
Pinckney	70,921	76,562	72,661	81,203	91,102	96,791	88,967	89,904
Pontiac Lake	5,439	6,574	16,260	17,416	15,686	12,021	11,108	10,094
Port Crescent	91,147	91,315	88,873	88,806	89,443	85,516	86,059	88,299
Proud Lake	55,192	60,078	76,409	85,549	96,942	90,492	60,059	54,790
Rochester-Utica	22	16	16	20	16	8	32	56
Sleeper	93,500	98,277	93,770	89,007	87,883	93,491	92,383	90,975
Sleepy Hollow	828	2,847	4,618	6,152	6,204	20,730	28,512	34,372
Sterling	84,767	79,200	90,891	97,806	107,168	106,164	107,412	108,655
Van Buren	86,215	88,169	73,046	79,623	72,599	72,682	69,527	72,975
Warren Dunes	87,895	85,838	105,497	118,309	114,361	110,828	104,540	105,890
Waterloo	114,149	109,540	103,821	129,578	121,639	101,077	104,809	113,839
Yankee Springs	130,852	136,742	141,552	141,377	136,217	135,032	134,973	137,518
Total	1,883,630	1,935,693	1,996,842	2,042,252	2,036,702	2,151,137	1,951,218	2,011,637
STATEWIDE	5,300,444	5,253,651	5,268,504	5,270,706	5,223,490	5,415,946	5,209,046	5,155,594

NOTE: A camper-visit is a visit by a member of camping party. Gladwin and White Cloud units are no longer operated by the MDNR.

SOURCE: Michigan Department of Natural Resources, Parks Division.

Table 13-7. Estimated number of day-visits to Michigan state parks and recreation areas, FY1983-FY1990.

STATE PARK OR RECREATION AREA	FISCAL YEAR (OCTOBER 1 THROUGH SEPTEMBER 30)							
	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90
UPPER PENINSULA								
Baraga	7,262	7,213	11,694	13,079	10,393	12,635	12,618	14,071
Bewabic	27,082	22,670	39,246	35,260	35,969	44,181	40,109	27,612
Brimley	80,229	71,452	79,025	80,139	81,997	96,741	108,745	115,236
Craig Lake	0	0	0	0	0	20	1,253	1,688
Fayette	73,874	74,749	74,817	80,735	82,616	83,921	84,910	76,569
Fort Wilkins	112,942	118,080	129,190	125,784	98,721	89,542	110,464	115,796
Indian Lake	16,062	15,534	17,858	18,760	21,871	21,865	25,065	16,992
Lake Gogebic	26,861	25,148	21,867	23,001	24,964	25,107	23,370	22,997
Mc Lain	157,364	127,948	132,201	134,102	145,319	169,876	137,265	125,115
Muskallonge Lake	17,060	14,155	15,046	14,668	17,393	22,173	19,826	19,038
Palms Book	57,921	57,350	64,978	70,127	68,395	68,379	63,879	65,236
Porcupine Mountains	256,828	260,979	266,240	279,798	290,607	342,464	358,318	302,653
Straits	58,015	56,823	43,201	42,240	42,240	35,793	32,631	33,780
Tahquamenon Falls	362,015	354,140	344,549	375,878	360,850	377,910	381,645	352,062
Twin Lakes	19,024	20,461	15,549	21,542	22,692	28,503	26,396	24,861
Van Riper	27,009	21,618	24,023	23,581	31,765	38,647	37,592	31,670
Wells	54,364	55,298	55,910	58,459	67,777	58,012	53,147	49,337
Total	1,353,912	1,303,618	1,335,394	1,397,153	1,403,569	1,515,769	1,517,233	1,394,713
NORTHERN LOWER PENINSULA								
Aloha	94,748	60,963	37,860	36,932	45,917	97,316	96,885	89,389
Bay City	299,825	309,553	414,964	506,520	545,277	603,411	409,677	413,069
Burt Lake	55,640	52,500	54,815	54,450	61,130	69,298	65,280	61,329
Cheboygan	41,160	39,961	33,861	32,741	35,960	47,013	41,364	37,483
Clear Lake	32,508	31,876	30,956	31,070	35,946	43,111	40,881	31,150
Fishermans Island	36,529	34,703	46,894	31,365	26,967	23,233	29,180	29,801
Gladwin	104	0	0	0	0	0	0	0
Harrisville	24,978	23,281	21,382	21,075	24,720	32,551	38,398	36,175
Hart-Montague	0	0	0	0	0	0	45,550	48,650
Hartwick Pines	136,424	162,629	154,880	157,020	164,605	173,657	188,162	185,836
Higgins Lake - North	146,658	166,774	130,572	118,461	113,725	144,919	118,582	97,531
Higgins Lake - South	214,179	162,824	154,844	157,369	207,621	267,746	266,925	237,029
Hoeft	16,740	16,074	16,604	18,428	18,816	19,714	21,991	18,632
Interlochen	137,763	121,298	66,236	92,404	201,662	127,094	105,695	66,694
Leelanau	43,527	36,146	45,548	123,555	182,213	125,985	103,513	99,224
Ludington	566,347	557,505	533,347	500,262	458,582	538,998	489,787	441,862
Mears	260,552	253,490	242,220	245,663	293,523	300,874	260,623	238,783
Mitchell	225,883	228,635	208,007	230,036	340,113	347,328	123,018	112,895
Negwegon	0	0	0	0	0	10,831	10,098	11,000
Newaygo	8,981	11,180	18,839	16,084	14,641	36,243	23,070	13,638
Onaway	22,780	19,199	18,983	23,458	21,182	28,866	29,685	31,842
Orchard Beach	14,386	20,556	42,592	73,695	69,293	60,074	31,270	32,211
Otsego Lake	100,155	79,968	64,766	77,208	62,503	73,287	62,827	47,376
Petoskey	178,655	182,300	180,271	184,920	199,689	216,028	225,451	192,205
Pinconning	3,277	0	0	0	0	0	0	0
Rifle River	40,573	43,759	44,503	49,733	55,477	59,430	50,282	52,741

Silver Lake	579,545	602,079	575,123	469,667	503,329	504,688	506,049	513,247
Tawas Point	184,697	174,299	169,072	172,270	176,937	198,019	211,441	206,496
Traverse City	86,897	100,483	86,347	92,358	98,827	128,414	97,988	95,021
White Cloud	150	0	0	0	0	0	0	0
Wilderness	41,533	43,740	37,776	43,243	49,282	50,660	88,884	74,085
Wilson	57,211	34,802	38,246	50,875	49,469	65,336	57,008	57,743
Young	43,197	37,031	33,732	29,488	31,020	40,864	59,376	50,219
Total	3,695,602	3,607,608	3,503,240	3,640,350	4,088,426	4,434,988	3,898,940	3,623,356
SOUTHERN LOWER PENINSULA								
Algonac	151,190	182,713	137,749	109,612	102,120	104,898	84,252	85,874
Bald Mountain	424,767	407,041	425,757	440,302	476,234	424,875	433,976	472,890
Brighton	194,086	176,517	185,875	190,346	179,897	182,013	183,113	180,392
Dodge No. 4	564,189	464,289	476,544	534,616	521,644	532,060	388,546	455,427
Duck Lake	100,588	94,925	64,549	82,659	105,481	306,092	111,532	92,070
Fort Custer	210,879	210,214	233,029	284,009	286,783	311,631	289,282	264,940
Grand Haven	773,465	745,115	954,450	957,999	1,158,951	1,325,182	1,232,025	987,275
Grand Mere	0	0	0	0	0	51,238	53,262	55,207
Hayes	635,425	494,914	531,584	518,073	530,015	542,837	494,446	424,963
Highland	332,194	337,630	259,887	191,087	265,338	258,077	141,000	201,128
Hoffmaster	332,184	292,246	312,289	297,039	312,856	379,243	333,742	290,734
Holland	1,597,581	1,447,890	1,399,505	1,293,553	1,384,147	1,428,092	1,385,350	1,201,277
Holly	791,924	687,518	806,154	530,408	442,695	453,891	288,544	264,448
Ionia	41,540	25,660	117,812	148,091	211,456	261,028	214,453	195,698
Island Lake	517,969	470,458	354,812	348,403	431,787	481,611	401,325	333,475
Kal-Haven	0	0	0	0	0	0	12,249	19,421
Lake Hudson	76,197	105,185	93,703	101,634	116,790	132,562	123,097	142,874
Lakeport	129,142	115,039	122,792	134,244	120,489	121,672	94,575	77,634
Maybury	151,383	197,499	234,778	206,802	288,813	321,838	310,495	351,815
Metamora-Hadley	84,939	75,186	60,309	82,129	127,430	179,721	178,964	178,947
Muskegon	321,631	322,157	352,289	309,920	425,360	455,555	442,384	397,049
Ortonville	114,859	103,054	101,208	102,099	118,123	148,782	145,715	126,169
Pinckney	551,867	444,863	456,059	458,319	551,398	530,662	425,790	502,687
Pontiac Lake	256,124	246,367	314,476	262,937	264,984	222,104	224,791	406,500
Port Crescent	73,829	83,556	95,915	83,117	117,863	106,659	104,332	108,591
Proud Lake	264,456	259,829	298,216	278,236	323,220	299,684	211,304	254,039
Rochester-Utica	404,628	454,253	501,069	785,297	772,459	632,571	543,720	468,762
Saugatuck	36,098	30,910	36,505	44,999	46,448	47,463	44,467	40,909
Seven Lakes	144,590	116,381	120,935	127,708	154,803	157,204	134,241	119,856
Sleeper	123,285	140,392	130,326	123,767	143,529	158,584	142,140	136,910
Sleepy Hollow	173,202	215,198	165,835	235,468	257,062	218,715	220,441	257,634
Sterling	718,726	746,897	856,975	733,688	734,270	835,409	798,877	905,135
Van Buren	163,784	222,489	217,521	213,827	337,044	260,533	322,617	325,977
Warren Dunes	1,232,016	1,229,689	1,218,485	1,311,297	1,268,452	1,037,080	819,562	941,741
Waterloo	453,146	440,149	437,302	427,008	435,423	417,504	480,426	485,284
Yankee Springs	537,435	532,281	546,074	588,369	639,010	661,078	571,395	562,633
Total	12,679,318	12,118,504	12,620,768	12,537,062	13,652,374	13,988,148	12,386,430	12,316,365
STATEWIDE	17,728,832	17,029,730	17,459,402	17,574,565	19,144,369	19,938,905	17,802,603	17,334,434

NOTE: A day-visit is a visit by a member of a party of day-users. Gladwin, Pinconning, and White Cloud units are no longer operated by the MDNR.

SOURCE: Michigan Department of Natural Resources, Parks Division.

Table 13-8. Estimated total number of visits to Michigan state parks and recreation areas, FY1983-FY1990.

STATE PARK OR RECREATION AREA	FISCAL YEAR (OCTOBER 1 THROUGH SEPTEMBER 30)							
	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90
UPPER PENINSULA								
Baraga	33,694	33,957	35,099	36,593	36,086	38,572	40,121	40,988
Bewabic	51,853	46,746	67,250	62,845	61,450	73,213	71,104	57,756
Brimley	175,354	155,300	163,862	167,990	175,904	199,545	207,030	210,857
Craig Lake	0	0	0	0	0	660	1,958	2,562
Fayette	101,770	99,635	101,423	107,423	109,819	112,716	113,702	103,563
Fort Wilkins	173,641	176,080	189,569	186,853	158,215	149,069	165,769	173,196
Indian Lake	96,540	92,770	97,532	99,645	102,752	107,303	108,325	98,373
Lake Gogebic	57,558	52,885	47,333	50,729	53,069	57,184	53,774	53,802
Mc Lain	206,024	171,308	174,405	175,398	189,725	211,600	180,765	168,115
Muskallonge Lake	67,115	61,684	69,665	65,258	71,141	76,423	72,024	69,309
Palms Book	57,921	57,350	64,978	70,127	68,395	68,379	63,879	65,236
Porcupine Mountains	359,709	354,155	361,645	375,486	387,771	441,497	458,321	366,312
Straits	219,052	208,946	187,182	189,721	190,610	176,885	179,768	163,423
Tahquamenon Falls	479,148	469,148	462,769	491,118	476,757	496,697	496,430	461,989
Twin Lakes	33,031	33,607	27,950	34,002	35,800	44,092	41,622	39,987
Van Riper	84,985	75,174	72,350	71,560	82,428	94,436	97,748	92,474
Wells	103,260	102,659	101,517	101,883	114,166	113,722	102,407	95,368
Total	2,300,655	2,191,404	2,224,529	2,286,631	2,314,088	2,461,993	2,454,747	2,263,310
NORTHERN LOWER PENINSULA								
Aloha	191,439	159,453	133,581	129,661	130,397	183,149	185,053	176,029
Bay City	360,889	374,326	484,488	582,418	623,368	679,085	489,977	495,145
Burt Lake	187,918	166,967	176,169	172,835	177,596	177,376	181,677	174,550
Cheboygan	58,620	58,694	53,616	52,017	55,098	68,627	62,632	58,493
Clear Lake	62,961	62,345	66,063	71,321	77,671	86,433	86,728	77,971
Fishermans Island	67,976	64,779	77,381	57,368	56,310	53,825	58,781	60,983
Gladwin	120	0	0	0	0	0	0	0
Harrisville	122,326	114,230	105,147	106,069	101,968	116,404	122,260	114,666
Hart-Montague	0	0	0	0	0	0	45,550	48,650
Hartwick Pines	174,729	201,540	191,574	195,860	201,125	208,889	224,763	222,596
Higgins Lake - North	232,229	251,222	213,801	186,292	173,876	204,239	190,692	169,461
Higgins Lake - South	397,324	344,887	337,225	340,238	377,528	439,684	443,287	406,629
Hoeft	51,422	49,055	50,568	51,651	59,060	67,733	68,057	60,487
Interlochen	306,206	284,274	225,504	250,511	367,655	294,285	254,735	227,426
Leelanau	74,822	70,254	79,470	157,395	216,151	158,993	129,161	122,943
Ludington	836,785	828,521	770,212	702,098	649,511	739,571	689,630	637,011
Mears	340,316	334,826	329,864	330,942	375,340	384,864	341,671	318,396
Mitchell	366,074	368,671	342,873	362,394	472,482	469,283	251,207	244,194
Negwegon	0	0	0	0	0	10,831	10,663	11,000
Newaygo	28,265	30,628	39,062	37,963	37,377	60,912	46,209	32,021
Onaway	47,846	44,468	44,728	49,514	46,080	56,698	56,111	58,631
Orchard Beach	95,672	102,176	113,777	150,100	147,375	134,920	103,946	100,946
Otsego Lake	187,692	161,203	142,451	156,991	134,585	150,606	135,333	120,943
Petoskey	229,585	234,615	229,034	252,367	278,024	300,310	308,230	271,749
Pinconning	3,277	0	0	0	0	0	0	0
Rifle River	110,727	115,043	117,529	121,482	124,750	125,628	117,703	119,912

Silver Lake	684,444	706,613	682,135	571,703	599,416	599,500	596,632	605,087
Tawas Point	269,842	255,640	249,817	250,512	254,089	283,494	299,077	292,578
Traverse City	263,331	274,935	258,833	264,656	258,220	292,098	266,476	245,454
White Cloud	160	0	0	0	0	0	0	0
Wilderness	143,966	146,752	138,328	139,407	144,801	145,880	181,033	162,730
Wilson	117,163	90,522	97,070	110,188	105,579	120,786	115,408	116,265
Young	151,547	141,141	135,467	125,381	119,263	139,470	156,572	145,770
Total	6,165,673	6,037,780	5,885,767	5,979,326	6,364,695	6,753,573	6,219,254	5,898,716
SOUTHERN LOWER PENINSULA								
Algonac	266,652	306,391	247,238	213,154	205,388	214,604	192,385	198,744
Bald Mountain	424,767	407,041	426,474	441,277	477,339	426,181	434,563	477,884
Brighton	251,733	238,319	250,014	254,339	249,408	246,748	251,611	237,816
Dodge No. 4	564,189	464,289	476,544	534,616	521,644	532,060	388,546	455,427
Duck Lake	100,588	94,925	64,549	82,659	105,481	315,754	111,532	92,070
Fort Custer	228,840	232,369	261,506	308,189	319,644	354,261	330,760	310,317
Grand Haven	853,918	829,098	1,041,031	1,045,634	1,251,512	1,418,641	1,321,016	1,079,698
Grand Mere	0	0	0	0	0	51,238	53,262	56,217
Hayes	721,326	581,479	613,858	603,902	613,396	626,142	569,309	499,037
Highland	343,950	349,840	278,138	211,340	288,175	381,287	151,187	207,325
Hoffmaster	480,260	447,840	465,652	446,585	457,670	526,799	474,255	433,725
Holland	1,768,719	1,618,920	1,571,070	1,460,046	1,538,064	1,584,109	1,528,606	1,354,068
Holly	828,691	728,683	847,075	579,854	492,700	503,891	331,034	322,917
Ionia	42,659	26,798	120,235	154,207	219,946	271,504	225,543	207,201
Island Lake	528,222	487,712	368,217	362,792	445,527	496,754	412,992	346,760
Kal-Haven	0	0	0	0	0	0	12,393	19,421
Lake Hudson	76,197	105,185	93,703	101,634	116,790	133,362	125,282	145,932
Lakeport	256,578	236,132	244,243	252,151	229,548	236,664	205,255	194,672
Maybury	152,339	198,349	236,135	207,352	289,383	323,070	311,568	353,092
Metamora-Hadley	174,892	168,000	151,534	172,479	210,328	248,771	255,268	261,063
Muskegon	421,210	422,720	488,094	427,348	545,627	578,626	565,744	517,098
Ortonville	123,105	111,695	109,193	110,873	126,281	158,737	153,053	133,493
Pinckney	622,788	521,425	528,720	539,522	642,500	627,453	514,757	592,591
Pontiac Lake	261,563	252,941	330,736	280,353	280,670	234,125	235,899	416,594
Port Crescent	164,976	174,871	184,788	171,923	207,306	192,175	190,391	196,890
Proud Lake	319,648	319,907	374,625	363,785	420,162	390,176	271,363	308,829
Rochester-Utica	404,650	454,269	501,085	785,317	772,475	632,579	543,752	468,818
Saugatuck	36,098	30,910	36,505	44,999	46,448	47,463	44,467	40,909
Seven Lakes	144,590	116,381	120,935	127,708	154,803	157,204	134,241	119,856
Sleeper	216,785	238,669	224,096	212,774	231,412	252,075	234,523	227,885
Sleepy Hollow	174,030	218,045	170,453	241,620	263,266	239,445	248,953	292,006
Sterling	803,493	826,097	947,866	831,494	841,438	941,573	906,289	1,013,790
Van Buren	249,999	310,658	290,567	293,450	409,643	333,215	392,144	398,952
Warren Dunes	1,319,911	1,315,527	1,323,982	1,429,606	1,382,813	1,147,908	924,102	1,047,631
Waterloo	567,295	549,689	541,123	556,586	557,062	518,581	585,235	599,123
Yankee Springs	668,287	669,023	687,626	729,746	775,227	796,110	706,368	700,151
Total	14,562,948	14,054,197	14,617,610	14,579,314	15,689,076	16,139,285	14,337,648	14,328,002
STATEWIDE	23,029,276	22,283,381	22,727,906	22,845,271	24,367,859	25,354,851	23,011,649	22,490,028

NOTE: Estimated total visits equals the sum of estimated camper-visits and estimated day-visits. Gladwin, Pinconning, and White Cloud units are no longer operated by the MDNR.

SOURCE: Michigan Department of Natural Resources, Parks Division.

Table 13-9. Number of overnight stays in Michigan state parks and recreation areas that provide camping, by month, 1989.

STATE PARK OR RECREATION AREA	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
UPPER PENINSULA													
Baraga	0	0	0	3	136	652	1,573	1,699	775	201	10	0	5,049
Bewabic	0	0	3	15	265	1,416	2,003	1,695	412	198	74	5	6,086
Brimley	1	5	10	23	732	3,192	7,340	7,633	1,293	234	21	5	20,489
Craig Lake	0	0	0	0	0	47	77	79	13	28	0	0	244
Fayette	0	0	0	3	140	733	1,593	1,734	425	76	2	0	4,706
Fort Wilkins	0	0	2	0	208	1,517	3,411	4,129	1,312	270	1	0	10,850
Indian Lake	0	0	3	21	614	2,756	5,664	6,073	1,117	253	17	0	16,518
Lake Gogebic	0	0	0	0	302	1,167	1,813	1,826	515	138	0	0	5,761
Mc Lain	0	11	2	18	357	1,302	2,788	3,106	854	192	1	0	8,631
Muskallonge Lake	0	0	0	17	284	1,773	3,366	4,325	1,108	146	9	0	11,028
Porcupine Mountains	43	42	62	30	694	2,560	4,111	6,640	2,324	780	56	42	17,384
Straits	2	0	1	64	866	4,536	8,245	10,019	2,923	561	14	0	27,231
Tahquamenon Falls	0	6	4	43	732	3,346	6,114	8,027	2,109	639	46	2	21,068
Twin Lakes	0	0	0	0	82	690	1,408	1,004	156	24	0	0	3,364
Van Riper	0	0	0	3	463	2,163	3,722	2,843	792	181	8	0	10,175
Wells	0	2	5	74	518	1,526	2,830	3,457	566	190	57	0	9,225
Total	46	66	92	314	6,393	29,376	56,058	64,289	16,694	4,111	316	54	177,809
NORTHERN LOWER PENINSULA													
Aloha	0	0	0	3	822	3,946	7,741	7,323	666	217	7	0	20,725
Bay City	41	368	401	322	1,382	3,051	3,494	4,222	1,123	520	125	55	15,104
Burt Lake	4	0	2	44	1,106	4,461	9,896	8,373	931	267	20	2	25,106
Cheboygan	0	1	0	1	107	582	1,418	1,563	222	90	1	0	3,985
Clear Lake	4	11	12	44	607	1,545	3,997	3,068	387	329	203	20	10,227
Fishermans Island	0	0	0	5	260	854	2,061	2,407	222	68	14	2	5,893
Harrisville	4	1	9	79	840	2,083	5,404	6,515	2,229	900	40	4	18,108
Hartwick Pines	36	46	19	54	486	1,141	1,402	1,792	833	564	123	46	6,542
Higgins Lake - North	23	45	37	38	913	3,340	5,632	5,145	921	532	134	37	16,797
Higgins Lake - South	33	45	15	108	1,895	6,355	10,736	15,380	1,370	586	78	9	36,610
Hoeft	0	0	1	26	303	1,113	2,857	4,278	755	260	47	0	9,640
Interlochen	0	3	4	25	1,686	5,273	12,104	11,745	1,085	425	21	0	32,371
Leelanau	0	0	0	23	224	862	1,366	1,710	445	173	18	0	4,821
Ludington	45	13	61	402	2,565	7,856	11,138	13,144	5,053	3,280	178	30	43,765
Mears	21	20	55	130	1,013	3,527	5,084	6,167	1,523	615	125	13	18,293
Mitchell	98	130	105	332	2,730	4,896	7,257	7,019	3,094	1,836	673	241	28,411
Negwegon	0	0	0	0	0	0	0	0	0	0	0	0	0
Newaygo	0	0	0	47	520	1,312	1,335	1,530	5	0	0	0	4,749
Onaway	0	0	0	4	310	1,043	1,938	1,841	436	127	95	0	5,794
Orchard Beach	0	0	4	87	752	1,928	4,178	5,659	1,505	1,153	126	0	15,392
Otsego Lake	3	0	0	28	1,042	2,528	5,730	5,396	846	487	96	25	16,181
Petoskey	60	47	35	54	779	2,616	5,192	6,147	1,212	617	54	47	16,860
Rifle River	20	22	33	191	1,210	2,433	3,334	3,729	1,095	1,140	630	21	13,858
Silver Lake	0	1	3	44	1,144	2,973	5,746	6,541	675	266	9	0	17,402
Tawas Point	0	3	6	245	995	3,245	5,725	6,230	1,259	541	15	6	18,270

Traverse City	121	126	193	280	1,906	4,567	9,320	9,888	3,587	1,599	141	36	31,764
Wilderness	9	7	19	80	868	3,690	5,842	6,813	1,089	383	57	12	18,869
Wilson	11	10	14	84	828	2,260	3,219	3,456	645	526	282	13	11,348
Young	19	20	8	16	1,124	3,386	8,173	8,444	690	399	20	22	22,321
Total	552	919	1,036	2,796	28,417	82,866	151,319	165,525	33,903	17,900	3,332	641	489,206
SOUTHERN LOWER PENINSULA													
Algonac	272	259	634	1,426	2,866	4,607	5,503	6,314	3,703	2,895	996	468	29,943
Bald Mountain	4	0	2	6	0	2	2	2	9	4	0	1	32
Brighton	320	352	372	444	1,676	2,625	2,698	3,385	861	660	321	159	13,873
Fort Custer	9	3	62	240	870	2,009	1,621	1,821	460	356	94	5	7,550
Grand Haven	1,215	0	24	201	1,386	5,060	5,152	6,392	2,086	432	43	13	22,004
Grand Mere	0	0	0	0	0	0	0	0	0	0	0	0	0
Hayes	14	10	47	209	1,235	3,040	3,784	4,463	779	545	54	7	14,187
Highland	0	0	8	30	206	366	398	405	93	57	16	0	1,579
Hoffmaster	42	48	116	465	2,505	7,390	10,509	12,198	2,681	1,630	141	47	37,772
Holland	2	0	39	114	2,756	7,594	9,872	11,000	867	405	18	0	32,667
Holly	23	16	144	406	1,177	2,356	2,987	3,814	1,047	791	192	39	12,992
Ionia	1	0	39	147	473	517	419	541	160	155	48	30	2,530
Island Lake	5	1	47	43	235	454	502	694	108	69	31	0	2,189
Lake Hudson	0	0	0	4	79	47	108	127	14	6	0	0	385
Lakeport	21	10	150	345	1,978	3,641	5,449	6,946	1,641	1,138	211	0	21,530
Maybury	0	2	5	6	6	5	2	14	5	11	6	0	62
Metamora-Hadley	3	11	131	284	1,747	3,335	3,717	4,437	951	910	107	39	15,672
Muskegon	2	4	28	128	1,851	4,802	8,025	9,423	1,321	428	16	2	26,030
Ortonville	8	5	13	36	238	276	261	390	115	82	28	0	1,452
Pinckney	39	38	130	326	1,891	5,027	6,224	7,429	1,769	1,079	188	20	24,160
Pontiac Lake	0	0	0	0	562	653	628	825	182	58	23	0	2,931
Port Crescent	12	2	42	173	1,099	3,538	4,979	5,843	1,700	837	909	5	19,139
Proud Lake	36	57	248	475	1,212	2,701	2,754	3,210	1,012	610	274	45	12,634
Rochester-Utica	2	0	0	0	0	2	0	0	0	0	2	0	6
Sleeper	5	4	26	145	1,204	3,463	6,028	6,546	714	366	26	0	18,527
Sleepy Hollow	40	40	54	108	674	1,134	913	1,236	428	360	79	19	5,085
Sterling	82	87	197	504	2,299	5,635	3,859	4,883	2,112	1,024	462	130	21,274
Van Buren	1	0	27	77	1,160	2,640	3,745	4,794	661	358	18	0	13,481
Warren Dunes	17	11	102	157	1,163	3,718	4,755	5,966	1,485	701	56	8	18,139
Waterloo	25	45	96	309	2,450	4,162	5,860	7,066	1,085	1,128	379	67	22,672
Yankee Springs	42	14	52	443	2,559	6,400	6,829	7,622	1,830	1,157	235	38	27,221
Total	2,242	1,019	2,835	7,251	37,557	87,199	107,583	127,786	29,879	18,252	4,973	1,142	427,718
STATEWIDE	2,840	2,004	3,963	10,361	72,367	199,441	314,960	357,600	80,476	40,263	8,621	1,837	1,094,733

NOTE: An overnight stay is the passage of one night by a camping party in a campground or backcountry area. Figures do not include overnight stays in cabins. Figures pertain to time periods which are aggregations of 7-day weeks and do not correspond precisely with calendar months. See text.

SOURCE: Michigan Department of Natural Resources, Parks Division.

Table 13-10. Estimated number of camper-visits to Michigan state parks and recreation areas that provide camping, by month, 1989.

STATE PARK OR RECREATION AREA	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
UPPER PENINSULA													
Baraga	0	0	0	22	670	3,415	8,814	9,298	4,149	1,163	44	0	27,575
Bewabic	0	0	8	74	1,180	6,941	10,323	8,751	2,582	1,057	295	27	31,238
Brimley	8	36	76	137	3,642	15,070	33,230	36,023	8,140	1,513	154	28	98,057
Craig Lake	0	0	0	0	0	176	238	237	46	186	0	0	883
Fayette	0	0	0	21	703	4,513	9,771	10,387	2,801	483	16	0	28,695
Fort Wilkins	0	0	12	0	982	7,794	17,353	20,372	7,403	1,780	12	0	55,708
Indian Lake	0	0	16	117	2,660	12,849	27,705	31,270	6,964	1,576	94	0	83,251
Lake Gogebic	0	0	0	0	1,389	5,877	9,888	10,011	2,939	849	0	0	30,953
Mc Lain	0	45	8	94	1,704	6,484	13,353	15,434	5,243	881	4	0	43,250
Muskallonge Lake	0	0	0	72	1,221	7,947	15,790	20,354	5,564	884	43	0	51,875
Porcupine Mountains	254	293	315	301	3,676	15,121	24,559	36,844	12,915	4,170	257	179	98,884
Straits	12	0	8	399	4,231	23,391	43,987	51,695	19,641	3,698	80	0	147,142
Tahquamenon Falls	0	36	24	230	3,433	17,397	33,755	43,369	12,597	4,303	190	14	115,348
Twin Lakes	0	0	0	0	289	2,392	6,450	5,118	851	89	0	0	15,189
Van Riper	0	0	0	11	2,151	11,577	20,042	19,805	5,154	1,358	72	0	60,170
Wells	0	12	30	403	2,153	7,856	15,325	18,109	3,928	1,235	259	0	49,310
Total	274	422	497	1,881	30,084	148,800	290,583	337,077	100,917	25,225	1,520	248	937,528
NORTHERN LOWER PENINSULA													
Aloha	0	0	0	12	2,997	16,511	32,210	31,569	4,151	1,110	45	0	88,605
Bay City	171	1,344	1,556	1,385	6,204	16,015	19,564	22,936	7,031	3,137	624	236	80,203
Burt Lake	24	0	4	251	4,669	20,430	44,253	38,882	6,210	1,834	100	12	116,669
Cheboygan	0	8	0	8	480	2,908	7,604	8,088	1,553	558	8	0	21,215
Clear Lake	24	61	68	228	2,483	7,059	17,557	13,398	2,529	1,737	916	101	46,161
Fishermans Island	0	0	0	33	1,210	4,253	10,343	11,987	1,525	395	78	12	29,836
Harrisville	29	8	50	422	3,554	10,037	23,739	29,640	11,369	4,892	212	26	83,978
Hartwick Pines	218	280	119	305	2,404	6,226	7,888	10,071	4,814	3,216	629	259	36,429
Higgins Lake - North	85	162	135	138	3,300	13,435	25,777	23,406	3,315	1,912	490	137	72,292
Higgins Lake - South	215	239	83	677	7,644	28,676	60,326	66,007	8,671	3,633	410	52	176,633
Hoeft	0	0	8	132	1,344	5,337	13,576	19,358	4,448	1,531	236	0	45,970
Interlochen	0	24	26	109	7,763	22,877	54,197	53,519	7,390	2,568	99	0	148,572
Leelanau	0	0	0	116	1,002	4,355	6,916	8,943	2,760	1,130	113	0	25,335
Ludington	218	64	477	2,113	11,390	36,965	46,987	56,411	25,957	17,784	900	165	199,431
Mears	99	98	293	744	4,308	16,066	21,116	26,010	7,936	3,691	657	60	81,078
Mitchell	566	704	546	1,644	12,631	22,046	31,624	33,315	15,256	9,792	2,983	996	132,123
Negwegon	0	0	0	0	0	0	565	0	0	0	0	0	565
Newaygo	0	0	0	174	2,225	5,434	6,541	7,761	385	0	0	0	22,520
Onaway	0	0	0	26	1,266	4,496	9,160	8,340	2,239	666	396	0	26,589
Orchard Beach	0	0	23	457	3,250	9,867	20,199	26,462	7,909	5,777	593	0	74,537
Otsego Lake	24	0	0	156	4,360	12,148	24,493	24,340	4,677	2,855	379	102	73,534
Petoskey	360	288	232	327	3,524	13,158	23,698	29,189	7,333	4,016	296	262	82,683
Rifle River	131	115	177	1,156	5,708	12,176	16,121	17,592	5,872	5,881	2,877	102	67,908
Silver Lake	0	2	8	261	5,166	16,057	29,060	33,809	4,731	1,843	48	0	90,985
Tawas Point	0	20	32	1,386	4,246	16,126	26,367	29,236	7,318	3,453	91	24	88,299

Traverse City	550	551	903	1,522	10,302	24,645	46,150	50,732	21,143	9,957	837	185	167,477
Wilderness	60	44	103	406	3,767	18,808	27,277	32,040	6,950	2,498	267	32	92,252
Wilson	70	53	76	513	3,677	11,765	16,325	17,027	4,098	3,162	1,386	75	58,227
Young	106	111	48	75	4,852	15,169	33,780	36,451	4,532	2,350	108	112	97,694
Total	2,970	4,176	4,967	14,776	125,726	393,045	703,413	766,519	192,102	101,378	15,778	2,950	2,327,800
SOUTHERN LOWER PENINSULA													
Algonac	1,009	964	2,348	5,281	10,593	17,049	20,362	23,365	13,702	10,711	3,693	1,735	110,812
Bald Mountain	117	0	18	126	0	21	18	51	168	75	0	32	626
Brighton	1,298	1,426	1,557	1,998	7,157	12,921	14,138	17,186	4,630	3,244	1,351	624	67,530
Duck Lake	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Custer	44	16	348	1,316	4,018	10,726	9,027	10,222	3,124	2,211	535	39	41,626
Grand Haven	0	0	141	919	6,327	21,549	21,274	26,486	9,067	2,991	137	90	88,981
Grand Mere	0	0	0	0	0	0	0	0	0	0	0	0	0
Hayes	72	61	241	1,172	5,477	16,127	20,243	22,743	4,798	3,451	293	25	74,703
Highland	0	0	58	281	1,358	2,180	2,355	2,213	712	407	187	0	9,751
Hoffmaster	162	181	433	1,722	9,712	27,346	38,855	46,449	9,921	6,033	540	176	141,530
Holland	12	0	178	698	11,993	32,181	41,707	48,057	6,155	2,921	94	0	143,996
Holly	92	64	584	1,592	4,392	7,785	7,898	13,258	3,865	2,994	800	116	43,440
Ionia	4	0	163	610	1,751	1,922	1,067	2,808	1,055	976	274	128	10,758
Island Lake	28	4	315	263	1,063	2,383	2,834	3,619	574	455	156	0	11,694
Kal-Haven	0	0	0	0	0	144	0	0	0	0	0	0	144
Lake Hudson	0	0	0	30	349	344	653	674	109	57	0	0	2,216
Lakeport	120	72	871	2,086	8,630	19,209	28,461	34,051	9,781	7,106	1,152	0	111,539
Maybury	0	32	58	90	84	114	48	136	60	150	72	0	844
Metamora-Hadley	22	46	625	1,588	7,678	16,432	18,533	21,002	5,803	5,010	524	192	77,455
Muskegon	12	30	106	586	7,035	22,234	37,188	46,610	7,126	2,567	139	8	123,641
Ortonville	69	16	52	232	1,278	1,495	1,584	1,434	614	554	107	0	7,435
Pinckney	143	143	484	1,230	6,999	18,601	23,027	27,488	6,546	3,995	727	74	89,457
Pontiac Lake	0	0	0	0	2,266	2,367	2,325	3,057	673	216	85	0	10,989
Port Crescent	101	16	156	1,057	4,958	17,058	22,441	26,364	8,965	5,151	248	24	86,539
Proud Lake	225	272	1,138	2,472	5,555	12,927	13,120	15,318	5,304	3,453	1,588	206	61,578
Rochester-Utica	12	0	0	0	0	8	0	0	0	0	8	0	28
Sleeper	36	24	140	847	5,104	17,508	29,839	31,075	4,710	2,163	152	0	91,598
Sleepy Hollow	170	174	270	584	3,594	5,724	5,454	7,551	2,320	1,972	410	108	28,331
Sterling	376	427	999	2,757	10,945	29,475	21,260	24,444	11,246	5,367	2,206	571	110,073
Van Buren	8	0	134	508	5,232	14,487	19,634	23,619	3,562	2,055	182	0	69,421
Warren Dunes	72	52	586	1,050	6,367	22,086	26,271	33,221	9,041	5,166	525	50	104,487
Waterloo	117	197	510	1,687	9,862	19,798	27,504	31,778	5,888	6,542	1,876	291	106,050
Yankee Springs	198	81	319	2,613	11,419	32,173	33,578	36,905	10,615	7,055	1,159	171	136,286
Total	4,519	4,298	12,832	35,395	161,196	404,374	490,698	581,184	150,134	95,048	19,220	4,660	1,963,558
STATEWIDE	7,763	8,896	18,296	52,052	317,006	946,219	1,484,694	1,684,780	443,153	221,651	36,518	7,858	5,228,886

NOTE: A camper-visit is a visit by a member of a camping party. Figures pertain to time periods which are aggregations of 7-day weeks and do not correspond precisely with calendar months. See text.

SOURCE: Michigan Department of Natural Resources, Parks Division.

Table 13-11. Estimated number of day-visits to Michigan state parks and recreation areas, by month, 1989.

STATE PARK OR RECREATION AREA	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
UPPER PENINSULA													
Baraga	0	0	88	567	889	3,640	2,764	2,549	1,221	657	217	0	12,592
Bewabic	44	44	47	136	1,527	10,966	14,927	10,670	1,072	734	124	3	40,294
Brimley	494	583	795	1,747	4,139	23,051	40,524	31,181	3,488	1,945	661	596	109,204
Craig Lake	0	0	0	0	0	194	500	425	134	374	0	0	1,627
Fayette	322	260	458	856	3,188	13,898	24,709	28,434	8,902	3,816	687	358	85,888
Fort Wilkins	549	566	892	903	4,992	16,720	27,578	36,328	14,832	7,107	703	813	111,983
Indian Lake	521	490	836	485	1,539	8,441	6,382	4,070	674	580	300	344	24,662
Lake Gogebic	65	56	45	141	1,283	3,829	6,560	7,243	2,666	1,110	324	122	23,444
Mc Lain	1,125	1,150	1,285	3,681	8,293	28,713	41,594	31,552	13,855	5,192	1,160	620	138,220
Muskallonge Lake	137	145	362	263	1,101	3,090	4,642	6,410	2,546	901	96	150	19,843
Paims Book	750	698	685	850	2,450	10,833	18,006	20,092	6,001	1,942	1,171	733	64,211
Porcupine Mountains	16,625	18,460	14,580	5,045	11,360	36,140	55,735	111,400	50,512	20,778	7,004	15,486	363,125
Straits	405	450	415	380	1,430	4,290	7,027	11,040	5,374	969	344	390	32,514
Tahquamenon Falls	2,916	3,070	3,402	3,937	14,693	58,308	88,727	110,093	62,039	27,364	4,268	4,722	383,539
Twin Lakes	230	198	184	10	451	5,714	10,283	6,440	2,394	298	0	17	26,219
Van Riper	0	0	0	0	895	9,767	17,422	7,911	1,257	482	64	0	37,798
Wells	935	938	655	4,496	3,994	9,896	12,010	11,879	3,937	2,290	1,383	752	53,165
Total	25,118	27,108	24,729	23,497	62,224	247,490	379,390	437,717	180,904	76,539	18,506	25,106	1,528,328
NORTHERN LOWER PENINSULA													
Aloha	205	221	117	411	2,205	16,167	55,330	20,232	1,111	344	183	108	96,634
Bay City	9,637	14,594	29,415	34,166	54,311	87,256	62,423	66,012	27,252	17,257	6,668	9,573	418,564
Burt Lake	495	485	510	990	3,325	14,450	22,850	18,925	1,920	855	477	483	65,765
Cheboygan	2,218	1,750	1,548	819	1,574	7,490	14,513	6,620	1,290	1,075	1,268	1,383	41,548
Clear Lake	690	1,859	789	969	2,075	7,871	13,852	8,092	1,754	1,247	1,591	604	41,393
Fishermans Island	406	507	537	969	1,088	4,692	8,422	8,698	1,649	1,503	1,617	1,208	31,296
Harrisville	0	0	0	0	1,528	6,459	13,009	12,535	2,372	1,081	35	0	37,019
Hart-Montague	0	0	0	0	0	0	0	41,740	3,810	2,590	1,510	1,510	51,160
Hartwick Pines	5,389	7,056	3,771	2,538	12,530	31,154	40,852	47,892	16,391	14,992	3,025	3,934	189,524
Higgins Lake - North	3,544	4,370	3,240	1,938	6,710	22,945	37,444	23,134	6,655	3,955	2,066	1,797	117,798
Higgins Lake - South	2,299	3,897	4,977	5,259	19,006	56,129	99,856	57,935	9,291	5,480	3,700	2,526	270,355
Hoeft	630	533	608	921	1,339	4,462	4,209	5,067	1,586	1,058	711	504	21,628
Interlochen	53	95	189	256	14,402	20,681	38,249	27,162	3,436	1,064	134	49	105,770
Leelanau	1,598	1,337	1,140	1,125	2,873	8,526	24,369	38,089	13,711	13,245	1,529	953	108,495
Ludington	8,328	6,315	15,375	14,794	30,687	75,993	127,725	125,955	34,295	24,854	10,808	7,796	482,925
Mears	2,718	3,212	5,812	11,529	16,684	41,724	66,246	72,125	17,328	11,951	7,874	4,165	261,368
Mitchell	184	953	1,120	910	5,116	35,247	31,466	29,217	11,804	4,240	1,319	698	122,274
Negwegon	10	0	0	126	306	1,701	2,090	2,415	1,098	926	1,171	0	9,843
Newaygo	0	0	0	198	3,956	6,258	5,345	5,937	469	0	0	0	22,163
Onaway	967	8,596	837	1,260	1,711	3,368	4,228	3,726	1,576	1,130	861	491	28,751
Orchard Beach	530	445	525	735	1,230	4,384	5,994	9,148	4,281	2,305	795	213	30,585
Otsego Lake	524	761	1,029	665	4,653	12,611	22,152	13,953	4,252	3,117	1,087	395	65,199
Petoskey	3,311	3,796	2,543	3,539	4,621	32,651	82,734	76,021	8,241	4,373	2,036	1,955	225,821
Rifle River	970	1,513	1,530	2,450	4,174	8,318	12,237	8,005	3,045	3,769	4,835	1,150	51,996
Silver Lake	2,535	2,850	5,663	10,620	58,910	74,845	129,195	168,581	35,850	18,085	3,205	1,605	511,944

Tawas Point	4,025	4,561	6,279	9,441	13,813	35,693	48,401	47,686	16,491	11,754	8,212	5,345	211,701
Traverse City	521	626	1,086	1,944	3,005	18,592	31,222	27,636	7,774	2,137	806	241	95,590
Wilderness	4,339	4,537	4,624	1,973	6,098	12,131	21,075	19,966	6,779	4,086	3,217	2,595	91,420
Wilson	515	310	467	833	3,715	14,807	19,932	12,669	1,720	1,22[illegible]	930	240	57,360
Young	1,716	2,202	1,628	1,168	2,040	8,611	24,062	12,761	2,592	2,011	1,375	1,824	61,990
Total	58,357	77,381	95,359	112,546	283,685	675,216	1,069,482	1,017,934	249,823	161,706	73,045	53,345	3,927,879
SOUTHERN LOWER PENINSULA													
Algonac	1,769	1,930	2,929	4,841	4,694	14,714	17,526	16,699	7,933	6,625	5,322	1,866	86,848
Bald Mountain	22,920	20,299	25,880	26,141	32,501	65,105	55,580	51,172	34,892	41,950	45,993	25,435	447,868
Brighton	7,810	7,825	10,435	10,105	13,624	30,862	35,989	26,132	12,952	10,756	13,053	6,200	185,743
Dodge No. 4	6,579	5,255	7,554	22,036	36,861	112,524	98,596	53,409	19,369	18,460	10,404	5,092	396,139
Duck Lake	1,797	2,043	3,535	3,509	3,623	23,993	37,991	21,053	5,566	3,119	2,792	1,845	110,866
Fort Custer	7,591	8,832	14,883	17,713	26,454	59,880	55,290	37,251	13,408	14,960	14,176	6,270	276,708
Grand Haven	55,250	56,550	78,900	62,450	74,175	193,925	245,400	244,450	66,585	65,475	53,150	23,700	1,220,010
Grand Mere	3,582	4,755	4,741	4,813	4,493	5,318	3,266	5,817	2,870	4,223	3,987	4,195	52,060
Hayes	1,470	1,280	2,639	4,799	27,900	111,790	185,105	142,265	12,153	5,576	1,315	1,190	497,482
Highland	4,054	3,482	9,111	11,293	11,027	23,540	25,391	23,502	9,065	9,366	4,389	6,037	140,257
Hoffmaster	7,253	6,499	9,642	16,323	32,543	60,929	80,960	73,051	19,389	20,847	6,330	7,639	341,405
Holland	15,356	14,908	41,875	61,655	127,650	345,390	368,159	322,515	46,512	16,630	14,017	9,790	1,384,457
Holly	5,637	4,365	7,731	13,113	20,496	68,926	65,798	57,882	22,754	23,203	6,206	4,478	300,589
Ionia	3,590	3,409	12,000	16,752	20,318	40,828	49,841	29,578	14,101	16,102	17,873	6,170	230,562
Island Lake	10,225	9,140	13,695	19,775	38,525	75,164	133,454	52,456	14,731	15,195	12,245	7,133	401,738
Kal-Haven	0	0	1,514	1,360	3,253	2,065	873	1,756	1,428	3,319	665	612	16,845
Lake Hudson	1,410	1,090	2,232	3,148	9,355	25,065	40,102	27,765	3,960	5,989	12,340	1,640	134,096
Lakeport	3,630	1,990	5,050	5,025	6,275	15,921	24,633	17,769	6,092	7,430	2,810	1,915	98,540
Maybury	13,024	9,377	21,298	25,402	37,208	53,288	33,400	42,225	26,876	38,265	13,708	17,179	331,250
Metamora-Hadley	1,860	1,541	5,008	3,600	7,128	41,402	65,442	38,956	6,619	8,113	7,815	4,709	192,193
Muskegon	9,898	9,357	8,430	6,950	13,120	88,894	120,100	118,865	39,630	14,160	5,529	5,770	440,703
Ortonville	7,154	4,279	5,651	5,252	7,022	20,743	33,927	30,160	10,542	9,022	10,049	4,100	147,901
Pinckney	24,626	21,077	26,136	32,212	30,200	64,761	72,711	58,441	26,120	43,895	36,259	23,970	460,408
Pontiac Lake	13,735	6,576	8,156	17,405	20,451	26,552	33,296	28,461	16,307	16,627	14,474	15,455	217,495
Port Crescent	2,768	2,404	4,387	7,077	8,745	18,433	21,344	20,412	7,441	5,949	4,188	2,425	105,573
Proud Lake	11,189	8,612	16,460	19,242	10,180	28,013	28,682	33,335	15,802	16,498	13,750	10,518	212,281
Rochester-Utica	14,387	12,992	35,033	44,710	46,943	66,941	60,224	83,648	81,046	90,167	28,126	9,895	574,112
Saugatuck	1,012	2,470	2,799	2,327	5,333	8,225	7,759	6,539	2,714	2,113	1,505	2,741	45,537
Seven Lakes	3,987	3,389	4,164	5,341	10,225	38,607	35,434	17,057	6,554	5,437	2,831	2,525	135,551
Sleeper	1,178	1,382	2,113	2,516	7,713	25,141	44,642	40,086	7,470	6,576	4,479	1,721	145,017
Sleepy Hollow	13,482	9,006	7,136	12,782	31,977	45,455	31,818	25,809	12,280	16,586	9,619	14,500	230,450
Sterling	12,797	12,708	27,161	47,055	137,074	213,444	128,033	106,085	45,980	42,034	22,852	11,046	806,269
Van Buren	1,425	1,388	3,522	6,555	26,249	65,546	96,536	103,501	12,575	6,240	914	578	325,029
Warren Dunes	8,770	9,782	22,928	30,246	61,365	166,567	187,374	206,482	58,682	42,771	22,325	10,014	827,306
Waterloo	18,514	18,481	24,817	24,790	37,115	73,580	98,190	85,380	26,575	34,738	33,109	16,230	491,519
Yankee Springs	16,310	12,940	13,060	21,435	44,855	125,650	147,005	97,215	39,260	52,885	20,585	15,080	606,280
Total	336,039	301,413	492,605	619,748	1,036,670	2,447,181	2,769,871	2,347,179	756,233	741,301	479,184	289,663	12,617,087
STATEWIDE	419,514	405,902	612,693	755,791	1,382,579	3,369,887	4,218,743	3,802,830	1,186,960	979,546	570,735	368,114	18,073,294

NOTE: A day-visit is a visit by a member of a party of day-users. Figures pertain to time periods which are aggregations of 7-day weeks and do not correspond precisely with calendar months. See text.

SOURCE: Michigan Department of Natural Resources, Parks Division.

Table 13-12. Estimated total number of visits to Michigan state parks and recreation areas, by month, 1989.

STATE PARK OR RECREATION AREA	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
UPPER PENINSULA													
Baraga	0	0	88	589	1,559	7,055	11,578	11,847	5,370	1,820	261	0	40,167
Bewabic	44	44	55	210	2,707	17,907	25,250	19,421	3,654	1,791	419	30	71,532
Brimley	502	619	871	1,884	7,781	38,121	73,754	67,204	11,628	3,458	815	624	207,261
Craig Lake	0	0	0	0	0	370	738	662	180	560	0	0	2,510
Fayette	322	260	458	877	3,891	18,411	34,480	38,821	11,703	4,299	703	358	114,583
Fort Wilkins	549	566	904	903	5,974	24,514	44,931	56,700	22,235	8,887	715	813	167,691
Indian Lake	521	490	852	602	4,199	21,290	34,087	35,340	7,638	2,156	394	344	107,913
Lake Gogebic	65	56	45	141	2,672	9,706	16,448	17,254	5,605	1,959	324	122	54,397
Mc Lain	1,125	1,195	1,293	3,775	9,997	35,197	54,947	46,986	19,098	6,073	1,164	620	181,470
Muskallonge Lake	137	145	362	335	2,322	11,037	20,432	26,764	8,110	1,785	139	150	71,718
Palms Book	750	698	685	850	2,450	10,833	18,006	20,092	6,001	1,942	1,171	733	64,211
Porcupine Mountains	16,879	18,753	14,895	5,346	15,036	51,261	80,294	148,244	63,427	24,948	7,261	15,665	462,009
Straits	417	450	423	779	5,661	27,681	51,014	62,735	25,015	4,667	424	390	179,656
Tahquamenon Falls	2,916	3,106	3,426	4,167	18,126	75,705	122,482	153,462	74,636	31,667	4,458	4,736	498,887
Twin Lakes	230	198	184	10	740	8,106	16,733	11,558	3,245	387	0	17	41,408
Van Riper	0	0	0	11	3,046	21,344	37,464	27,716	6,411	1,840	136	0	97,968
Wells	935	950	685	4,899	6,147	17,752	27,335	29,988	7,865	3,525	1,642	752	102,475
Total	25,392	27,530	25,226	25,378	92,308	396,290	669,973	774,794	281,821	101,764	20,026	25,354	2,465,856
NORTHERN LOWER PENINSULA													
Aloha	205	221	117	423	5,202	32,678	87,540	51,801	5,262	1,454	228	108	185,239
Bay City	9,808	15,938	30,971	35,551	60,515	103,271	81,987	88,948	34,283	20,394	7,292	9,809	498,767
Burt Lake	519	485	514	1,241	7,994	34,880	67,103	57,807	8,130	2,689	577	495	182,434
Cheboygan	2,218	1,758	1,548	827	2,054	10,398	22,117	14,708	2,843	1,633	1,276	1,383	62,763
Clear Lake	714	1,920	857	1,197	4,558	14,930	31,409	21,490	4,283	2,984	2,507	705	87,554
Fishermans Island	406	507	537	1,002	2,298	8,945	18,765	20,685	3,174	1,898	1,695	1,220	61,132
Harrisville	29	8	50	422	5,082	16,496	36,748	42,175	13,741	5,973	247	26	120,997
Hart-Montague	0	0	0	0	0	0	0	41,740	3,810	2,590	1,510	1,510	51,160
Hartwick Pines	5,607	7,336	3,890	2,843	14,934	37,380	48,740	57,963	21,205	18,208	3,654	4,193	225,953
Higgins Lake - North	3,629	4,532	3,375	2,076	10,010	36,380	63,221	46,540	9,970	5,867	2,556	1,934	190,090
Higgins Lake - South	2,514	4,136	5,060	5,936	26,650	84,805	160,182	123,942	17,962	9,113	4,110	2,578	446,988
Hoeft	630	533	616	1,053	2,683	9,799	17,785	24,425	6,034	2,589	947	504	67,598
Interlochen	53	119	215	365	22,165	43,558	92,446	80,681	10,826	3,632	233	49	254,342
Leelanau	1,598	1,337	1,140	1,241	3,875	12,881	31,285	47,032	16,471	14,375	1,642	953	133,830
Ludington	8,546	6,379	15,852	16,907	42,077	112,958	174,712	182,366	60,252	42,638	11,708	7,961	682,356
Mears	2,817	3,310	6,105	12,273	20,992	57,790	87,362	98,135	25,264	15,642	8,531	4,225	342,446
Mitchell	770	1,657	1,666	2,554	17,747	57,293	63,090	62,532	27,060	14,032	4,302	1,694	254,397
Negwegon	10	0	0	126	306	1,701	2,655	2,415	1,098	926	1,171	0	10,408
Newaygo	0	0	0	372	6,181	11,692	11,886	13,698	854	0	0	0	44,683
Onaway	967	8,596	837	1,286	2,977	7,864	13,388	12,066	3,815	1,796	1,257	491	55,340
Orchard Beach	530	445	548	1,192	4,480	14,251	26,193	35,610	12,190	8,082	1,388	213	105,122
Otsego Lake	548	761	1,029	821	9,013	24,759	46,645	38,293	8,929	5,972	1,466	497	138,733
Petoskey	3,671	4,084	2,775	3,866	8,145	45,809	106,432	105,210	15,574	8,389	2,332	2,217	308,504
Rifle River	1,101	1,628	1,707	3,606	9,882	20,494	28,358	25,597	8,917	9,650	7,712	1,252	119,904
Silver Lake	2,535	2,852	5,671	10,881	64,076	90,902	158,255	202,390	40,581	19,928	3,253	1,605	602,929

Tawas Point	4,025	4,581	6,311	10,827	18,059	51,819	74,768	76,922	23,809	15,207	8,303	5,369	300,000
Traverse City	1,071	1,177	1,989	3,466	13,307	43,237	77,372	78,368	28,917	12,094	1,643	426	263,067
Wilderness	4,399	4,581	4,727	2,379	9,865	30,939	48,352	52,006	13,729	6,584	3,484	2,627	183,672
Wilson	585	363	543	1,346	7,392	26,572	36,257	29,696	5,818	4,384	2,316	315	115,587
Young	1,822	2,313	1,676	1,243	6,892	23,780	57,842	49,212	7,124	4,361	1,483	1,936	159,684
Total	61,327	81,557	100,326	127,322	409,411	1,068,261	1,772,895	1,784,453	441,925	263,084	88,823	56,295	6,255,679
SOUTHERN LOWER PENINSULA													
Algonac	2,778	2,894	5,277	10,122	15,287	31,763	37,888	40,064	21,635	17,336	9,015	3,601	197,660
Bald Mountain	23,037	20,299	25,898	26,267	32,501	65,126	55,598	51,223	35,060	42,025	45,993	25,467	448,494
Brighton	9,108	9,251	11,992	12,103	20,781	43,783	50,127	43,318	17,582	14,000	14,404	6,824	253,273
Dodge No. 4	6,579	5,255	7,554	22,036	36,861	112,524	98,596	53,409	19,369	18,460	10,404	5,092	396,139
Duck Lake	1,797	2,043	3,535	3,509	3,623	23,993	37,991	21,053	5,566	3,119	2,792	1,845	110,866
Fort Custer	7,635	8,848	15,231	19,029	30,472	70,606	64,317	47,473	16,532	17,171	14,711	6,309	318,334
Grand Haven	55,250	56,550	79,041	63,369	80,502	215,474	266,674	270,936	75,652	68,466	53,287	23,790	1,308,991
Grand Mere	3,582	4,755	4,741	4,813	4,493	5,318	3,266	5,817	2,870	4,223	3,987	4,195	52,060
Hayes	1,542	1,341	2,880	5,971	33,377	127,917	205,348	165,008	16,951	9,027	1,608	1,215	572,185
Highland	4,054	3,482	9,169	11,574	12,385	25,720	27,746	25,715	9,777	9,773	4,576	6,037	150,008
Hoffmaster	7,415	6,680	10,075	18,045	42,255	88,275	119,815	119,500	29,310	26,880	6,870	7,815	482,935
Holland	15,368	14,908	42,053	62,353	139,643	377,571	409,866	370,572	52,667	19,551	14,111	9,790	1,528,453
Holly	5,729	4,429	8,315	14,705	24,888	76,711	73,696	71,140	26,619	26,197	7,006	4,594	344,029
Ionia	3,594	3,409	12,163	17,362	22,069	42,750	50,908	32,386	15,156	17,078	18,147	6,298	241,320
Island Lake	10,253	9,144	14,010	20,038	39,588	77,547	136,288	56,075	15,305	15,650	12,401	7,133	413,432
Kal-Haven	0	0	1,514	1,360	3,253	2,209	873	1,756	1,428	3,319	665	612	16,989
Lake Hudson	1,410	1,090	2,232	3,178	9,704	25,409	40,755	28,439	4,069	6,046	12,340	1,640	136,312
Lakeport	3,750	2,062	5,921	7,111	14,905	35,130	53,094	51,820	15,873	14,536	3,962	1,915	210,079
Maybury	13,024	9,409	21,356	25,492	37,292	53,402	33,448	42,361	26,936	38,415	13,780	17,179	332,094
Metamora-Hadley	1,882	1,587	5,633	5,188	14,806	57,834	83,975	59,958	12,422	13,123	8,339	4,901	269,648
Muskegon	9,910	9,387	8,536	7,536	20,155	111,128	157,288	165,475	46,756	16,727	5,668	5,778	564,344
Ortonville	7,223	4,295	5,703	5,484	8,300	22,238	35,511	31,594	11,156	9,576	10,156	4,100	155,336
Pinckney	24,769	21,220	26,620	33,442	37,199	83,362	95,738	85,929	32,666	47,890	36,986	24,044	549,865
Pontiac Lake	13,735	6,576	8,156	17,405	22,717	28,919	35,621	31,518	16,980	16,843	14,559	15,455	228,484
Port Crescent	2,869	2,420	4,543	8,134	13,703	35,491	43,785	46,776	16,406	11,100	4,436	2,449	192,112
Proud Lake	11,414	8,884	17,598	21,714	15,735	40,940	41,802	48,653	21,106	19,951	15,338	10,724	273,859
Rochester-Utica	14,399	12,992	35,033	44,710	46,943	66,949	60,224	83,648	81,046	90,167	28,134	9,895	574,140
Saugatuck	1,012	2,470	2,799	2,327	5,333	8,225	7,759	6,539	2,714	2,113	1,505	2,741	45,537
Seven Lakes	3,987	3,389	4,164	5,341	10,225	38,607	35,434	17,057	6,554	5,437	2,831	2,525	135,551
Sleeper	1,214	1,406	2,253	3,363	12,817	42,649	74,481	71,161	12,180	8,739	4,631	1,721	236,615
Sleepy Hollow	13,652	9,180	7,406	13,366	35,571	51,179	37,272	33,360	14,600	18,558	10,029	14,608	258,781
Sterling	13,173	13,135	28,160	49,812	148,019	242,919	149,293	130,529	57,226	47,401	25,058	11,617	916,342
Van Buren	1,433	1,388	3,656	7,063	31,481	80,033	116,170	127,120	16,137	8,295	1,096	578	394,450
Warren Dunes	8,842	9,834	23,514	31,296	67,732	188,653	213,645	239,703	67,723	47,937	22,850	10,064	931,793
Waterloo	18,631	18,678	25,327	26,477	46,977	93,378	125,694	117,158	32,463	41,280	34,985	16,521	597,569
Yankee Springs	16,508	13,021	13,379	24,048	56,274	157,823	180,583	134,120	49,875	59,940	21,744	15,251	742,566
Total	340,558	305,711	505,437	655,143	1,197,866	2,851,555	3,260,569	2,928,363	906,367	836,349	498,404	294,323	14,580,645
STATEWIDE	427,277	414,798	630,989	807,843	1,699,585	4,316,106	5,703,437	5,487,610	1,630,113	1,201,197	607,253	375,972	23,302,180

NOTE: Estimated total visits equals the sum of estimated camper-visits and estimated day-visits. Figures pertain to time periods which are aggregations of 7-day weeks and do not correspond precisely with calendar months. See text.

SOURCE: Michigan Department of Natural Resources, Parks Division.

Monthly statistics on the system as a whole indicate that in 1989 the number of overnight stays in and camper-visits to the system both peaked in August (Tables 13-9 and 13-10). Estimated day-visits and total visits, however, both peaked in July (Tables 13-11 and 13-12).

A Profile of State Park Visitors

In 1985 the MSU Department of Park and Recreation Resources conducted a survey of state park visitors for the Parks Division to help the latter more effectively manage and market the park system. The following is a summary of the survey's basic findings. Results are presented on the characteristics and behavior of both state park campers and day users. More detailed results may be found in the study's principal report (Fridgen, et. al., 1986a) and in graduate student papers (Beatty, 1986; Peterman, 1986; Said, 1986). Recommendations submitted to the Parks Division as a result of the study may be found in Fridgen, et. al. (1986b).

Survey Methods

Data collection occurred on-site through the use of self-administered questionnaires. Separate questionnaires and sampling plans were designed for campers and day users. Both questionnaires queried visitors on their demographic and socioeconomic characteristics, behavior patterns, management preferences, and satisfaction levels.

The sampling plans were designed to provide representative samples of visitors to the various parks and regions of the state. Questionnaires were distributed to campers in 64 of the 94 state parks and to day users in 60 parks. In 53 parks both campers and day users were sampled.

The sampling process involved randomly dividing the parks into three equal size groups and then randomly assigning 10 sampling days between May 1, 1985 and September 30, 1985 to each group of parks. Only one day in May and one day in September were sampled because relatively low visitation levels occur during these months. Also, since attendance was nearly equally distributed between weekdays and weekends, sampling days were equally divided between weekdays and weekend days.

Eleven camper questionnaires were scheduled to be distributed in campgrounds on each sampling date. Campers were selected between 4 p.m. and 7 p.m. using a systematic random sampling technique. Park staff delivered questionnaires to registered campers at the sites and returned later to answer any questions and retrieve completed questionnaires.

Day users were sampled during 5 two-hour sampling periods between 9 a.m. and 7 p.m. A sampling period was specified for each of the 10 day use sampling dates. The distribution of sampling periods was designed to obtain a representative sample of day users across different times of the day. On the sampling dates park staff distributed day user questionnaires, cover letters, and return envelopes to the first 14 vehicles which arrived during the sampling period. Distribution of questionnaires was alternated between the driver and other persons in the vehicle who were age 16 or older.

A total of 7,040 camper and 8,400 day user questionnaires were distributed. The response rate was 63% for campers and 47% for day users.

Since proportional sampling was not employed, the data were weighted to adjust for variations in the attendance levels of the parks. Thus respondents who were contacted at more heavily visited parks were assigned higher weights than respondents contacted at less-visited parks. The data were also weighted to adjust for "length of stay bias," i.e., overrepresentation of long-term visitors (Lucas, 1963) and "visits bias," i.e., overrepresentation of frequent visitors (Perdue, 1986).

State Park Campers

Registered campers on the average were 41 years old, and most were married (87%), Caucasian (98%), and had at least a high school diploma (94%). Compared to the Michigan population, campers had above-average education and income levels. Almost 60% of the campers had one or more years of college, which is twice the rate of the Michigan population. And while 1980 Census data indicate that over half of Michigan's households have incomes of less than $20,000, only 18% of camper respondents had household incomes of less than $20,000. These results suggest a core clientele of users able to afford camping. However, they also suggest that state park campgrounds receive little use by low income Michiganians.

While Blacks constituted 12.9% of the Michigan population in 1980, they comprised only 0.1% of the respondents. This suggests that Blacks, many of whom live within 50 miles of many state parks in southeast Michigan, may have little interest in or past experience with camping. However, camping opportunities in southeastern state parks are somewhat limited compared to other parts of the state. Camping also may be a luxury that Blacks in lower-income brackets may be unable to afford. Asians, Hispanics, and Native Americans, while each comprising less than 1% of Michigan's population, were represented at levels more comparable to their proportion of Michigan's populace than were Blacks.

Party Composition

The average camping party size was 3.6 persons and the most frequent party size was 2 persons (35%). Over three-quarters (77%) of the parties consisted of four persons or less.

State park camping is very much a family activity. Eighty percent of the parties consisted of all family members and another 10% consisted of family and friends. Just friends comprised only 7% of the parties and only 3% were camping alone. Thirteen percent reported that their parties included one or more children age 5 or younger, over 20% had children age 5 to 12, and teens and young adults were present as well. Four percent of the parties contained one or more persons age 65 or older.

Couples in their 30s with young children were overrepresented in state parks compared to their proportion of the state's population. This is significant since the early exposure of children to camping plays an important role in developing life-long interest in camping and state parks, as evidenced by the fact that the children of parents who camped or visited as day users constituted the largest percentage of new users to the state park system. While the overrepresentation of young families and young children, from the Parks Division's perspective, is a positive finding, the national demographic trends are not encouraging. Fewer new families are being created, and those created are formed later in life and include fewer children.

Origins and Destinations

Eighty-three percent of the campers were Michiganians and 17% were nonresidents. About a quarter (27%) of all campers resided in southeast Michigan (Wayne, Livingston, Macomb, Oakland, and Washtenaw counties). The neighboring states of Ohio, Illinois, and Indiana were the largest sources of nonresident campers. For all campers, the average distance between their homes and the park was 189 miles.

Eighty-seven percent of the camping nights were generated by Michiganians and 13% were generated by nonresidents. Both groups were loyal state park campers--87% of the residents and 72% of the nonresidents camped in Michigan state parks during the previous year (1984). The largest percentage of nonresident campers (26%) selected southwestern Michigan as their destination. Seventy percent of the residents and 59% of the nonresidents had previously visited the campground were they were contacted.

Trip Characteristics and Length of Stay

Campers on the average stayed at the campground 4.7 nights. Eighty-two percent of the campers planned to stay a week or less and only 4% planned to stay more than two weeks. Less than 15% stayed only one night. On the average, campers were on 7-day trips away from their permanent residences. The overall trip was longer than the stay at the campground: while nearly a third were on trips of a week or more, only 19% planned to camp in the campground for the same length of time.

Nearly a third (32%) of the state park campers were first-time visitors to the campground where they were contacted, but the strong majority had previously visited a state park as either a camper (91%) or day user (82%). This suggests that only a small percentage of state park campers are new users of the state park system.

Camping History

Registered campers on the average camped 17.6 nights per year, had camped in Michigan state parks for 13.2 years, and had camped 17.6 years altogether. Those who camped during the previous year (1984) on the average camped 15.2 nights--12.9 nights in Michigan and 6.7 nights in Michigan state parks. An average of two of the 12.9 Michigan nights were in private campgrounds in the state. Of those who did not camp during the previous year, 53% last camped in 1983, 22% last camped between 1980 and 1982, and only 9% last camped before 1970.

Equipment

Twenty-nine percent of the campers used a tent, 23% used a camp trailer, 23% used a travel trailer, 13% used a motorhome or 5th wheeler, 8% used a truck camper or converted bus or van, 2% used a pickup cover or unconverted van, and 2% used some combination of the above. Seventeen percent of the campers towed a boat for use in the park.

Information Sources and Reservation Patterns

Respondents were asked to indicate on a list of 19 information sources the three most important sources that prompted their first visit to the campground. The most frequently-mentioned sources were recommendations from other campers (55%), state park brochures (38%), and state highway maps (26%). Established camping information outlets and the mass media were infrequently mentioned. For example, a total of only 16% of the campers indicated that *Woodall's*, *Trailer Life*, AAA, and/or the Michigan Association of Private Campground Owners directory were important sources.

Past experience (54%), park employees (49%), and signs in the park (42%) were the most frequently-cited sources of information used by campers while staying in the park. The park map (33%) and other park users (32%) were also frequently cited.

Twenty-seven percent of the campers reported that they had made a reservation at the campground. A similar percentage (23%) said they generally selected a campground and made a reservation before leaving home. The majority (57%) stated that they had a campground selected before leaving home, 12% selected a site en route, and 8% selected a campground after arriving at their destination. Less than 1% made a reservation en route. In sum, the vast majority (80%) usually had a campground selected before leaving home, and only 20% made the decision during the trip.

Campground Selection and Satisfaction

Respondents were asked to rate, on a scale from 1 ("not important") to 5 ("crucial"), the importance of 22 campground attributes when selecting a state park campground. The attributes with the highest median rankings were: clean facilities (4.6), secure facilities (4.4), hospitable employees (3.9), availability of showers (3.9) and campfires (3.9), natural surroundings (3.8), regulations to control late night noise and other activities (3.8), flush toilets (3.7), and a swimming beach (3.7). The attributes with the lowest rankings were: boat rental (1.3), boat ramp (1.4), proximity to home or work (1.4), water and sewer hookups (1.4), rules permitting pets (1.5), and an historic site on location (1.5). In sum, respondents sought clean and safe facilities, hospitable staff, and "creature" comforts along with the outdoor amenities associated with a camping experience (campfires, swimming, and beautiful surroundings).

When asked to indicate the single most important reason behind their decision to camp at the campground, the most frequently checked items were "past experience" (28%), proximity to home or work (8%), and proximity to area attractions (7%). New campers most frequently checked "recommendation by others" (15%). This suggests that providing campers with a quality experience encourages them to tell others of their experience.

Respondents were presented with a list of campground attributes and asked to indicated the "one thing" they liked "best about this campground." A campsite near a lake or stream was the best-liked item for 15% of the campers, followed by the natural surroundings (12%). Asked in a similar manner what they liked least, 9% mentioned remoteness from home or work. Other concerns were crowding (7%), small campsites (5%), poor swimming (5%), and campsites located too far from the water (4%). Campers were also asked to rate the campground they were staying in on a scale from 1 ("very dissatisfied") to 10 ("very satisfied"). The average score was 8.4, with less than 6% rating the campground at 5 or less.

Recreation Activities

Campers were asked to rate the importance of selected recreational activities when visiting a state park on a scale from 1 ("not important") to 5 ("crucial"), and to indicate which activities they had participated in during their stay. Median scores were highest for swimming (3.8), hiking (3.2), and sightseeing (2.8). The highest participation rates were for hiking/walking trails (66%), swimming (63%), sightseeing (54%), fishing (43%), visiting users (39%), picnicking (37%), and boating (29%). Off-road vehicle use had the lowest median rating (1.1) and one of the lowest participation rates (4%).

Campers were also asked if they participated in 12 selected activities in Michigan state parks between October, 1984 and April, 1985. Nearly half (48%) indicated that they participated in one of the activities listed. The most popular activities were camping (22%), fishing (16%), and hiking (13%). Eight percent cross-country skied or hunted and 3% rode an off-road vehicle or snowmobile in state parks during this period.

Expenditures

The average per party expenditure associated with a camping trip in Michigan state parks was $171.70 (Table 13-13). Over half of this ($92.20) was spent at home preparing for the trip, 19% ($33.55) was spent en route, and 27% ($45.95) was spent near the park. Food and vehicle-related expenses were the most costly items, while lodging, of course, comprised very little of the cost. Lodging expenses included reservation and camping fees mailed before the start of trips, hotel/motel expenditures, and camping fees exclusive of those paid to the park in which respondents were contacted.

Expenditures varied significantly among campers. For example, average spending per trip on restaurants near the parks was $10.25 per party, but 63% of the parties did not make any such expenditures. Average expenditures in the local area per person per night were higher among nonresidents ($3.60) than residents ($2.65).

Average local expenditures per party per trip in the various regions shown in Figure 13-1 are reported in Table 13-14. The means ranged from a high of $62.45 in the Northern Lower Peninsula (Region 3) to a low of $26.65 in the Thumb. The above-average spending in the three northern regions (Regions 2, 4, and 5) of the Lower Peninsula partially resulted from the relatively high percentages of campers that resided outside of these regions. Spending per party per night and per person per night was lowest in the Thumb and southeast.

Spending per party per night and per person per night was relatively high in the two Upper Peninsula (U.P.) regions. In fact, parties in the eastern U.P. on the average spent more per night ($12.30) and per person per night ($3.60) than parties in any other region. However, spending per party per trip in the U.P. was relatively low because camping parties were somewhat smaller and stayed fewer nights than parties in other regions.

Total annual trip spending by state park campers was about $34 million (Table 13-15). Resident campers spent about $27.6 million, 28% ($7.7 million) of which was spent in communities near the parks. Nonresident campers spent about $6.4 million on their trips to the parks; $2.5 million of this was spent in Michigan and $1.5 million was spent near the parks. Campers spent a total of $9.2 million in communities near the parks.

State Park Day Users

Day users were similar to campers in terms of socioeconomic characteristics. On the average day users were 37 years old, and most were married (77%), Caucasian (98%), and had at least a high school diploma (95%). Fifty-six percent had gross family incomes of $30,000 or above and 10% had incomes of $60,000 or more; only 7% had incomes below $10,000.

Table 13-13. Average per trip expenditures of state park camping parties in Michigan.

	Location of Spending			
	At Home	En Route[1]	Near Park[2]	Total
Groceries	$43.65	$ 6.45	$17.50	$67.60 (40%)
Vehicle-related	27.50	13.45	7.30	48.25 (28%)
Restaurant and bar	3.80	7.30	10.25	21.35 (12%)
Sporting goods	11.35	1.30	3.60	16.25 (10%)
Lodging	2.10	2.40	1.45	5.95 (3%)
Other	3.80	2.65	5.85	12.30 (7%)
Total	$92.20 (54%)	$33.55 (19%)	$45.95 (27%)	$171.70 (100%)

[1] Over 20 miles from the park.

[2] Within 20 miles of (but not in) the park.

Table 13-14. Average near-park spending by state park campers in nine regions in Michigan.

Region	Percent of Parties From Region	Percent of Parties From Michigan	Average Persons/ Party	Average Nights/ Trip	Average Person-nights/ Trip	Average Near-Park Spending[1] Party/ Trip	Party/ Night	Person/ Trip	Person/ Night
1 West U.P.	20	65	3.4	3.3	11.2	$36.45	$11.05	$10.70	$3.25
2 East U.P.	5	74	3.4	3.5	11.9	43.00	12.30	12.65	3.60
3 Northern L.P.	7	88	3.3	5.5	18.2	62.45	11.35	18.90	3.45
4 Northwest	7	78	3.5	5.4	18.9	60.05	11.10	17.15	3.15
5 Northeast L.P.	10	89	3.9	4.9	19.1	50.05	10.20	12.85	2.60
6 Southwest L.P.	42	75	3.5	4.5	15.8	36.95	8.20	10.55	2.35
7 Thumb	17	92	3.4	4.8	16.3	26.65	5.55	7.55	1.60
8 South central L.P.	29	95	4.0	5.8	23.2	44.45	7.65	11.10	1.90
9 Southeast L.P.	17	85	4.0	4.7	18.8	$28.45	$ 6.05	$ 7.10	$1.50

NOTE: "L.P." means Lower Peninsula; "U.P." means Upper Peninsula.

[1] Within 20 miles of (but not in) the park.

Table 13-15. Estimated total expenditures of resident and nonresident state park campers in Michigan.

Location of Spending	Residents	Nonresidents Total	Nonresidents In Michigan
At home	$15,544,390[a]	$2,805,646[b]	---
En route	4,356,173	2,134,384[c]	$1,067,192
Near park	7,733,908	1,493,632	1,493,632
Total trip	$27,634,471	$6,433,662	$2,560,824

NOTE: According to the Parks Division, 938,828 campsite-nights occurred in 1985. Based on the average number of nights resident and nonresident respondents camped in 1984, it was estimated that 87% (816,780) of these nights were by residents and 13% (122,048) were by nonresidents. This estimate was based on a weighted average:

83 (pct. of resident campers) x 7.6 (avg. no. nights of 1984 Michigan state park camping) = 630.8

17 (pct. of nonresident campers) x 5.6 (avg. no. nights of 1984 Michigan state park camping) = 95.2

In 1984 resident campers camped an average of 7.6 nights and nonresident campers camped an average of 5.6 nights in Michigan state parks. 630.8/7,268 = 87% 95.2/726.0 = 13%.

The number of state park camping trips was calculated as follows:

938,828 (site-nights) x .87 = 816,780 (site-nights)/4.8 (avg. nights/trip) = 170,163 trips by residents.

938,828 (site-nights) x .13 = 122,048 (site-nights)/4.2 (avg. nights/trip) = 29,059 trips by nonresidents.

Resident campers comprised 83% of persons camping in state parks and 87% of the camping nights. Nonresidents comprised 17% of the campers and 13% of the camping nights.

[a] $91.35 x 170,163 trips.

[b] $96.55 x 29,059 trips.

[c] It was assumed that 50% of en route (more than 20 miles from the park) expenditures were in Michigan. Nonresidents traveled an average of 376 miles (one way) to the park in which they received a questionnaire.

Compared to their proportion of the Michigan population, 30-39 year olds were overrepresented in day user parties, senior citizens were underrepresented, Blacks were greatly underrepresented, and other minorities were more closely represented. The income and educational levels of day users were above average for Michiganians.

Party Composition

The average party size was 3.6 persons and the most frequent party size was 2 persons (28%). Like campers, day users were mainly in family groups. Sixty-five percent of the parties consisted of all family members and another 16% consisted of friends and family. Thirteen percent of the parties consisted of just friends, 3% were traveling alone, and 2% were traveling in an organized group. Children and teens under age 18 were present in 35% of the parties. Eleven percent of the day user parties included one or more children age 5 or younger, 16% had children 5-12 years old, and 9% had teens between the ages of 13 and 17. As with campers, seniors age 65 and over were present in only 4% of the day user parties. But whereas camper parties were almost equally composed of men and women, day use parties were more likely to contain women (59%).

Origins and Destinations

Over three-quarters (76%) of the day users were Michiganians; 24% were nonresidents. Twenty-five percent of the resident day users resided in southeast Michigan (Macomb, Oakland, Washtenaw, and Wayne counties). The largest number of nonresidents came from the neighboring states of Illinois (9%), Indiana (4%), Ohio (3%), and Wisconsin (2%). Nonresidents comprised a higher proportion of day visitors in the western U.P. and the southwestern Lower Peninsula than in other regions. The largest absolute number of day visitors visited state parks in the southwestern Lower Peninsula. Resident day users generated 88% of the visits and nonresidents generated 12% of the visits. The park was the primary destination for a majority of both residents and nonresidents.

Trip Characteristics and Length of Stay

Day users stayed an average of 5 hours, but 62% stayed 4 hours or less. Nearly 10% spent 9 or more hours at the park. A small percentage of day users were also campers staying at the park and their inclusion in the day use sample influenced the length of stay figures.

Eighty-seven percent of the day users had planned to visit the park, and 72% reported that visiting the park was the primary reason for their trip. Seventy-three percent had previously visited the park; 64% as a camper and 88% as a day user. Day users on the average had been visiting Michigan state parks for 18 years and during the previous year (1984) spent 5 days visiting the parks.

Nearly two-thirds (65%) of the day users stayed at their permanent residence the night before visiting the park. The remainder of the sample stayed at a hotel or motel (10%), the campground of the park in which they were contacted (7%), some other campground (7%), with friends or family (4%), or in second homes (3%).

State park day use facilities serve more than local people. Thirty-two percent of the users traveled to the park from other than their permanent residence or second home, apparently as travelers on a vacation-type trip. The average duration of such trips was 6 days.

Information Sources

Day users were asked to indicate on a list of 19 information sources the three most important sources that prompted their first visit to the park. They were also asked to indicate the three most important information sources that were useful to them after arriving in the park. The top three sources used before arriving were: a recommendation by a camper (26%), a recommendation by a noncamper (25%), and the Parks Division brochure (17%). Like campers, day users showed a strong tendency to use word-of-mouth information in their decision to visit a park. However, day users were less likely to use the state park brochure or commercial campground publication outlets than were campers. The top three sources used after day users' arrival were: a previous visit to the park (58%), signs posted in the park (47%), and other park users (31%). Campers relied more on state park employees, state park brochures, and maps upon arrival.

Satisfaction Levels

Day users were asked to indicate on lists of selected park attributes what they liked best and least about the park in which they were contacted. The most frequently-cited reasons for liking the park were: swimming beach (13%), natural surroundings (12%), and proximity to home or work (10%). The most frequently-mentioned reasons for not liking the park were: remoteness from home or work (13%), crowding (9%), and the presence of an alcohol ban (5%).

Day users were also asked to indicate on a list of selected reasons for park visitation which was the most important reason behind their decision to visit the park. The most frequent response was past experience (18%), followed by swimming beach (13%), natural surroundings (7%), and the recommendation of others (7%). The overall satisfaction rating was 8.2 on the 10-point scale. Only 5% rated the park at 5 or less.

Residents and nonresidents differed in their expressed reasons for visiting the park. Residents were most likely to base their choice on past experience, while nonresidents were more likely to cite the presence of a swimming beach. When asked what they liked best about the park, residents most frequently cited natural surroundings, whereas nonresidents most frequently mentioned swimming beaches.

Recreation Activities

Day users were asked to rate the importance of various recreational activities when visiting a state park on the 1-5 scale described above, and to indicate which activities they had participated in during their visit. Median ratings were highest for swimming (4.0), picnicking (3.8), hiking or walking trails (3.1), sightseeing (3.0), and visiting a nature center or historic site (2.5). The highest participation rates were for swimming (54%), picnicking (50%), hiking/walking trails (45%), sightseeing (40%), visiting historic sites or nature centers (20%), visiting other users (15%), fishing (14%), and boating (14%). State park campers were more likely to have participated in hiking (66%), fishing (43%), and boating (29%).

Day users were also asked to indicate whether they had participated in any of 12 recreation activities in state parks between October, 1984 and April, 1985. Nearly half (46%) stated that they participated in at least one activity at a state park during this period. The most popular activities were hiking (17%), camping (14%), fishing (11%), cross-country skiing (9%), sledding (6%), and hunting (6%).

Expenditures

Day user parties on the average spent only a third of what campers spent on their trips ($58.35 and $171.70, respectively) (Table 13-16). The pattern of spending, however, was similar: 46% of the total was spent at home for the trip, 23% en route, and 31% within 20 miles of the park. The largest category of trip expenditures was for groceries or convenience store food and drinks at $15.15, vehicle-related expenditures were second at $14.70, and restaurant and bar meals and drinks third at $12.00. These figures were influenced by the presence of nonresidents in the sample, who were on longer trips. Lodging expenditures at home represent prepayment for lodging reservations by day users who were on overnight trips.

The average day user party spent $18.20 near the park. However, such expenditures varied widely. For example, although average spending in restaurants near the park was $5.85, 79% of the parties did not make any such expenditures. On a per person per day basis, average local spending by day users ($5.20) was nearly double that of campers ($2.65).

Spending varied considerably across regions (Table 13-17). Expenditures near the park were highest in the northwest Lower Peninsula (Region 4), partially due to the fact that 84% of the day users in this region traveled from outside the region. Local spending was lowest in the southeastern (Region 9) and southwestern (Region 6) regions, in part because over three-quarters of the parties resided in each region, respectively.

Total trip expenditures by day users were about $247 million; $209.4 million by residents and $37.8 million by nonresidents (Table 13-18). Nonresidents spent about $15.9 million in Michigan on their trips, assuming 50% of their en route expenditures were in Michigan. About $80.5 million were spent by day users in communities near the parks; about $70.3 million by residents and $10.2 million by nonresidents. This total for local spending is over eight times the camper total of $9.2 million. Restaurants, lodging establishments, and grocery and convenience stores benefitted the most from day user expenditures.

About $58.8 million ($51.8 million by residents and $7.0 million by nonresidents) of the $80.5 million in local spending can be attributed to state parks, since 74% of the resident day users and 68% of the nonresidents indicated that visiting the park was the primary purpose of their trip.

Total State Park-Related Expenditures by Campers and Day Users

State park users spent about $281 million on their camping and day use trips to Michigan's state parks. All but about $25.8 million was spent in Michigan. Nonresidents spent about $18.5 million in Michigan while on camping or day use trips to the parks. Visitors spent $90 million in communities near the parks. At least $9.2 million of camper expenditures and $58.8 million of day user expenditures, or $68 million in total, can be directly attributed to the parks, since the park visits on which these expenditures occurred were reported to be the primary reasons for the outings.

Table 13-16. Average per trip expenditures of state park day use parties in Michigan.

	Location of Spending			
	At Home	En Route[1]	Near Park[2]	Total
Groceries	$10.65	$ 1.45	$ 3.05	$15.15 (26%)
Vehicle-related	9.30	3.70	1.70	14.70 (25%)
Restaurant and bar	1.55	4.60	5.85	12.00 (21%)
Lodging	0.90	3.30	5.20	9.40 (16%)
Sporting goods	2.55	0.10	0.90	3.55 (6%)
Other	1.65	0.40	1.50	3.55 (6%)
Total	$26.60 (46%)	$13.55 (23%)	$18.20 (31%)	$58.35 (100%)

[1] Over 20 miles from the park.

[2] Within 20 miles of (but not in) the park.

Table 13-17. Average near-park spending by state park day users in nine regions in Michigan.

Region	Percent of Parties From Region	Percent of Parties From Michigan	Average Persons/ Party	Percent on Overnight Trips	Avg. Length of Overnight Trips (No. Nights)	Percent Whose Primary Trip Purpose Was Visiting Park	Average Near-Park Spending[1] Party/Trip	Person/Trip
1 West U.P.	30	68	3.5	17	8.7	66	$19.35	$ 5.50
2 East U.P.	13	85	3.5	4	5.7	78	17.20	4.90
3 Northern L.P.	30	89	3.5	19	8.0	64	40.50	11.55
4 Northwest L.P.	16	84	3.5	18	6.1	72	49.55	14.15
5 Northeast L.P.	39	91	3.5	4	5.3	68	12.20	3.50
6 Southwest L.P.	36	57	3.6	6	6.2	67	7.85	2.20
7 Thumb	37	100	3.6	21	3.4	69	17.60	4.90
8 South central L.P.	47	93	4.2	11	5.5	87	18.80	4.45
9 Southeast L.P.	78	90	3.4	9	4.1	81	$ 4.50	$ 1.30

NOTE: "L.P." means Lower Peninsula; "U.P." means Upper Peninsula.

[1] Within 20 miles of (but not in) the park.

Table 13-18. Estimated total expenditures of resident and nonresident state park day users in Michigan.

Location of Spending	Residents	Nonresidents Total	Nonresidents In Michigan
At home	\$100,350,650[a]	\$16,289,620[b]	...
En route	\$ 38,717,967	\$11,261,313	\$ 5,630,657[c]
Near park	\$ 70,324,471	\$10,266,127	\$10,266,127
Total trip	\$209,393,088	\$37,817,060	\$15,896,784

NOTE: According to the Parks Division, 17,459,402 day visits occurred in 1985. This figure was reduced by 10%. Based on the average number of 1984 visits reported by respondents (5.7 visits by residents and 2.5 visits by nonresidents), it was estimated that 88% (13,487,546) of the visits were by residents and 12% (1,839,211) by nonresidents. The estimate was based on a weighted average:

76.1 (pct. of residents) x 5.7 (avg. visits in 1984) x 3.5 (persons/party) = 1,518

23.9 (pct. of nonresidents) x 2.5 (avg. visits in 1984) x 3.6 (persons/party) = 215

1,518/1,733 = 88%   215/1,733 = 12%

The number of party-trips was calculated as follows:

15,713,462 (visits) X .88 = 13,827,846/3.5 (persons/party) = 3,950,813 party-trips by residents

15,713,462 (visits) x .12 = 1,885,615/3.6 (persons/party) = 523,782 party-trips by nonresidents

Some state park campers may have been also counted as day users. This, however, was probably not extensive since: (1) not all parks with day use areas have campgrounds, (2) only about 9% of the day users camped in the parks, and (3) the day use estimates were derived from a combination of car counts and actual counts at entry points. In some parks campers could have driven to day use areas and therefore could have been included in day use car counts, but it is unlikely that this resulted in significant double counting. Double counting at most added 3-5% to the day use estimates and this was accounted for by reducing day use estimates by 10%.

[a] 3,950,813 x \$25.40 per party per trip.

[b] 523,782 x \$31.10 per party per trip.

[c] It was assumed that half of en route spending occurred in Michigan.

Summary and Conclusions

Michigan's state park system consists of over a quarter of a million acres of land managed by the MDNR Parks Division and the Mackinac Island State Park Commission. It is one of the largest and most heavily visited state park systems in the nation.

A recent survey of state park visitors found that the latter were generally loyal, returning families with children who had used the parks for a number of years. While the study did not generate information on potential or former users, the information obtained on present users suggests that they are generally satisfied with their state park experiences.

The survey also found that the parks were primarily visited by middle class, white Michiganians. Since children were present in most day use and camper parties, the users of tomorrow are being exposed to the system as children. This is important from the Parks Division's perspective, since few visitors are new to the system.

Respondents to the survey expected clean and safe facilities, hospitable employees, and modern camping accommodations, but also sought contact with nature. During their visit, they pursued a range of activities, especially swimming, hiking, and sightseeing.

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CHAPTER 14

CAMPING IN MICHIGAN

Charles M. Nelson

Introduction

Camping in Michigan is important as a recreation activity, as a base for other forms of recreation, and as a type of lodging. According to the U.S. Travel Data Center, 11% of all trips to and through Michigan in 1983-84 involved an overnight stay in a camper, recreation vehicle (RV), or tent (Table 3-2; page 25). A survey by Ross Roy, Inc. similarly found that 14% of the pleasure trips to and through Michigan in 1983-86 involved an overnight stay in a public or private campground (Table 3-4; page 33). Moreover, the thousands of campsites available in Michigan provide travelers with nearly as many lodging opportunities as do commercial lodging establishments. In 1985 there were 88,053 designated campsites open to the public in Michigan (Table 14-1), compared to 96,503 guest rooms in the state's lodging facilities in 1986 (Table 7-1; page 96).

This chapter presents an overview of camping in Michigan. It discusses campground supply, use, and pricing, RV shipments to Michigan, and camper characteristics. More detailed information on state park camping and state park campers may be found in Chapter 13. The information presented on campground supply, use, and pricing generally pertains to 1985 since more recent information was often not available. "Camping" herein refers only to the use of designated campgrounds, as opposed to "dispersed camping" in areas not specifically designated as a campground.

Campground Supply

The supply of designated campgrounds in Michigan provides travelers with a wide range of camping opportunities. In the private and non-profit sectors, camping is provided by commercial campgrounds and by non-profit groups and associations such as fraternal and religious organizations. In the case of each of these providers, all designated campsites are licensed by the Michigan Department of Public Health (MDPH). The MDPH also licenses designated sites provided by local units of government, including townships, villages, cities, and counties. State campgrounds are operated by the Michigan Department of Natural Resources (MDNR) through rustic state forest campgrounds and more developed state parks. Finally, the federal government provides camping in national parks and national forests.

Commercial campgrounds offer by far the largest number of sites (Table 14-1). State parks and local public campgrounds are the next two largest providers. The large number of sites provided by local public campgrounds is somewhat surprising considering their lack of publicity compared to a well-known system such as Michigan state parks. Group, non-profit campgrounds are not open to the public but provide an important substitute for many campers who might otherwise use commercial or public campgrounds.

Table 14-2 shows the supply of campsites in Michigan in 1985, disaggregated by the regions shown in Figure P-1 (page xxxiv). In 1985 campsites were most numerous in the Southern Lower Peninsula, while the largest number of campgrounds were in the Northern Lower Peninsula. The statistics in Table 14-2 also show that while commercial campgrounds provided only 30% of the campsites in the Upper Peninsula, they provided 51% of the campsites in the Northern Lower Peninsula and 70% of the campsites in the Southern Lower

Table 14-1. Supply of campgrounds and campsites in Michigan by provider, 1985.

Campground Provider	No. Campgrounds	No. Campsites	Mean sites/ campground	% of total sites
Commercial (a)	754	54,645	72.5	58.9
State park (b)	69[a]	14,422	209.0	15.5
Local public (a)	158	13,645	86.4	14.7
Group, non-profit (a)	70	4,750	67.9	5.1
State forest (c)	149	3,200	21.5	3.4
National forest (d)	72	1,864	25.9	2.0
National park (e)	7	277	39.6	0.3
Total	1,279	92,803	72.6	100.0

NOTE: Group, non-profit campsites are not open to the general public.

[a] 69 state parks offered camping, although some state parks had more than one campground.

SOURCES: (a) Michigan Dept. of Public Health. "Licensed and Proposed Campgrounds in Michigan 1985"; (b) Michigan DNR Parks Division "Michigan State Parks Campsite Data 1985"; (c) Personal communication Dean Sandell, Forest Management Division, DNR; (d) US Forest Service RIM computer printout, 1985; (e) National Park Service, Camping in the National Parks (1985).

Table 14-2. Supply of designated campgrounds and campsites in Michigan by region, 1985.

	UPPER PENINSULA			NORTHERN LOWER PENINSULA			SOUTHERN LOWER PENINSULA		
Campground Provider	No. campsites	No. campgrounds	Mean sites/ cmpgnd.	No. campsites	No. campgrounds	Mean sites/ cmpgnd.	No. campsites	No. campgrounds	Mean sites/ cmpgnd.
Commercial	3,000	76	39.5	17,388	286	60.8	34,257	392	87.4
State park[a]	2,857	16	178.6	6,241	28	222.9	5,214	25	208.6
Local gov.	1,680	36	46.7	5,395	70	77.1	6,570	52	122.7
Group	83	5	16.6	1,962	29	67.6	2,705	36	74.8
St. forest	1,109	65	17.1	2,091	84	24.9	0	0	0.0
Nat. forest	1,169	43	27.2	717	29	24.7	0	0	0.0
Nat. park	47	6	7.8	230	2	115.0	0	0	0.0
Total	9,945	247	40.3	34,024	528	64.4	48,856	505	96.7

[a] 69 state parks offered camping, although some state parks had more than one campground.

SOURCES: Same as Table 14-1.

Peninsula. Campground size also increased from north to south, more than doubling from the Upper Peninsula to the Southern Lower Peninsula.

In 1977, the MDNR (1979) estimated that there were 78,505 campsites in Michigan. MDPH statistics on licensed campgrounds and figures obtained from state and federal campground providers indicate that the supply of campsites during the ensuing five years sharply increased (Table 14-3). This resulted primarily from increases in the number and sizes of commercial, group, and local public campgrounds. According to MDPH license records of campsite construction permits, most of this growth occurred in commercial and non-profit group campgrounds. In contrast, state and federal camping opportunities remained essentially static over this period, with a slight increase in average size occurring, partially due to the closing of some small state forest campgrounds and a modest expansion of some state park campgrounds.

Campground Use

Summer occupancy rates in state and federal campgrounds remained fairly static between 1980 and 1985 (Table 14-4). Occupancy rates in commercial, group, and local public campgrounds are less understood. A 1984 study of commercial campground occupancy (Stynes and Mahoney, 1986) at campgrounds affiliated with the Michigan Association of Private Campground Owners (MAPCO) suggests that June 30-September 15 occupancy rates were about 40%. No research on occupancy rates in local public campgrounds has been conducted.

The above estimates of occupancy rates were used to estimate market shares in Michigan's camping market (Table 14-5). However, it is important to keep in mind the following limitations of occupancy rate estimates. First, in state and national forest campgrounds, fees are often collected by an "honor system" in which campers self-register, and compliance is usually not checked by management personnel. This procedure is likely to produce occupancy rates that are somewhat conservative, since an estimated 17% of state forest campers do not register unless approached by management personnel (Nelson, et. al., 1984). Second, occupancy rates at commercial campgrounds are not likely to be as high as those at campgrounds that participated in the 1984 MAPCO study. And third, because of the lack of data on local public and non-profit group campgrounds, the estimates of occupancy at these facilities are only a best guess.

Market shares were estimated as follows. The 1980-81 National Family Opinion study (Michigan Travel Bureau, 1985) estimated that there were 18.0 million camper-days in Michigan during a one-year period. Dividing this figure by the average party size of 4 reported by Stynes and Mahoney (1986) yielded 4.5 million camping party-days annually in Michigan. Since state park records for 1980-85 indicate that about 80% of state park camping occurs between the Memorial Day and Labor Day weekends, this estimate was multiplied by 0.8 to derive an estimate of 3.6 million camping party-days during the summer. The approximate occupancy rates reported in Table 14-4 were then multiplied by the number of days in the season and the number of campsites offered by each provider to obtain a rough estimate of market shares. The results suggest that commercial campgrounds capture about 54% of the summer camping market, that public-sector campgrounds capture about 42%, and that group campgrounds capture about 4%.

Table 14-3. Supply of state/federal public versus local public and private campgrounds and campsites in Michigan, 1980-85.

	COMMERCIAL, GROUP, AND LOCAL PUBLIC (a)			STATE AND FEDERAL PUBLIC (b)		
Year	No. campgrounds	No. campsites	Mean sites/ campground	No. campgrounds	No. campsites	Mean sites/ campground
1980	836	57,048	68.2	321	19,475	60.7
1981	894	63,437	71.0	321	19,559	60.9
1982	900	65,984	73.3	321	19,575	61.0
1983	933	67,872	72.7	301	19,424	64.5
1984	951	71,425	75.1	302	19,687	65.2
1985	982	73,040	74.4	298	19,763	66.3

SOURCES: (a) Personal communication Susan Lorenzen, Michigan Dept. of Public Health; (b) Michigan Dept. of Natural Resources, Parks Division; personal communication Dean Sandell, MDNR Forest Management Division; U.S. Forest Service; U.S. National Park Service.

Table 14-4. Memorial Day weekend through Labor Day weekend campground occupancy rates in Michigan by provider, 1980-85.

Year	State Parks(a)	State Forests(b)	Huron-Manistee Nat. Forest(c)	Sleeping Bear Dunes National Lakeshore(d)
1980	57.0	34.8	N.A.	42.3
1981	55.1	34.6	N.A.	54.3
1982	56.2	36.4	N.A.	40.9
1983	58.6	32.1	38.0	37.3
1984	60.0	35.8	41.4	43.8
1985	56.0	30.5	40.8	42.6

SOURCES: (a) Michigan Dept. of Natural Resources, Parks Division. Data include overnight stays in backcountry, organization campgrounds, and horseman's campgrounds, which tend to slightly inflate occupancy rates; (b) Michigan Dept. of Natural Resources, Forest Mgt. Division; (c) U.S. Forest Service; (d) National Park Service. Data cover only Platte River campground from 6/1-8/31 annually.

Table 14-5. Estimates of Michigan camping market share by campground provider.

Campground Provider	No. Sites		Season Length (Days)		Occupancy Rate		Estimated Camping Party-Days	Market Share
Commercial	54,645	X	102	X	.35	=	1,950,826	54.1%
State park	14,422	X	102	X	.6	=	882,626	24.5%
Local public	13,645	X	102	X	.3[a]	=	417,537	11.6%
Group	4,750	X	102	X	.3[a]	=	145,350	4.0%
State forest	3,200	X	102	X	.35	=	114,240	3.2%
Nat. forest	1,864	X	102	X	.45	=	85,557	2.4%
National park	277	X	102	X	.43	=	12,149	0.3%
Total	92,803	X	102	X	.38	=	3,608,285	

[a] Best guess.

Campground Pricing

The price of camping in Michigan steadily escalated between 1980 and 1985, with the largest known increases in the primitive, semi-developed public sector, which had previously been characterized by a lack of fees (Table 14-6). In interpreting this table caution should be exercised in comparing commercial campground fees with those of other types of campgrounds. The estimates of commercial campground fees were obtained from systematic samples of 100 commercial campgrounds listed in the Michigan section of *Woodall's Campground Directory Eastern Edition* for each of the five years noted. These fees were base rates and often did not include electricity or sewer hookups.

Commercial campground fees varied considerably across regions of the state, whereas those of state and federal providers were generally uniform across regions. A regional breakdown of the commercial campground fees from Table 14-6 shows that fees were higher in the Lower Peninsula than in the Upper Peninsula (Table 14-7). The shorter camping season in the Upper Peninsula, the smaller size campgrounds, and the comparatively lower prices combine to make profitability particularly challenging in this region.

In 1990, camping fees were $5.00 at state forest campgrounds, $5.00 at rustic state park campgrounds, $9.00 at most modern state park campgrounds and $10.00 in 14 heavily used parks, no charge to $8.00 at national park campgrounds, and $3.00 to $6.00 at national forest campgrounds, except concessioner-operated campgrounds. The latter were typically higher priced and heavily used. The above price figures show that camping fees at state and federal campgrounds in Michigan increased at a slower rate between 1985 and 1990 than between 1980 and 1985. Statistics on 1990 campground fees at commercial campgrounds are unavailable.

Recreation Vehicle Shipments

In 1989 Michigan ranked second in the nation in RV shipments to dealers, and fourth in the nation in RV shipments per capita (Table 14-8). Among heavily populated, industrial states Michigan ranked first in RV shipments per capita.

Compared to other states in the Great Lakes region (i.e., Illinois, Indiana, Minnesota, Ohio, and Wisconsin), Michigan ranked first in shipments of RVs in general (Table 14-9), and in shipments of most types of RVs in particular, including conventional travel trailers, 5th wheel trailers, folding camping trailers, truck campers, Type A motor homes, mini motor homes, van campers, and low profile motor homes. Michigan ranked second in shipments of park trailers and van conversions, and fourth in shipments of compact motor homes (Recreation Vehicle Industry Association, 1989).

Over the past 15 years RV shipments to Michigan and other states in the Great Lakes region appear to have been sensitive to energy prices and overall economic conditions, the highest levels of shipments occurring during periods of economic growth and stable and abundant energy supplies (Table 14-9). Between 1979 and 1989 shipments generally increased, but this growth was attended by one or more drops in the case of each state in the region. Shipments to Wisconsin increased more steadily than those to other states in the region.

In terms of RV ownership, residents of Michigan and other states in the North Central region were second behind those in the West. A 1984 study conducted by the University of Michigan found that 17% of the households in the West owned an RV, compared to 10% of the households in the North Central region (Recreation Vehicle Industry Association, 1986). This may have been due in part to the large acreages of public recreation land on which to use these vehicles in the West and the relatively high rates of second home ownership in the North

Table 14-6. Base camping fees (in dollars per night) at state, federal, and commercial campgrounds in Michigan, 1980-85.

Year	State Parks		State Forests	National Forests	National Parks	Commercial (averages)
	Rustic	Modern				
1980	2.00	6.00	2.00	2-4.00	NC or 2.00	6.06
1981	2.00	6.00	3.00	2-5.00	NC or 2.00	6.69
1982	3.00	6.00	3.00	2-5.00	NC or 2.00	7.30
1983	4.00	7.00	4.00	2-5.00	NC or 4.00	7.71
1984	4.00	7.00	4.00	2-6.00	NC or 6.00	8.26
1985	4.00	8.00	4.00	3-6.00	NC or 6.00	N.A.
Percent change, 1980-85	+100%	+33.3%	+100%	+50%	+300%	+36.3%[1]

[1] Percent change for commercial is only for 1980-84.

SOURCES: Parks and Forest Management Divisions MDNR; U.S. Forest Service; National Park Service; Woodall's Campground Directory Eastern Edition, annual.

Table 14-7. Estimated average base commercial campground fees in Michigan by region, 1980-84.

Year	UPPER PENINSULA	NORTHERN LOWER PENINSULA	SOUTHERN LOWER PENINSULA
	---------Average Price---------		
1980	$5.50	$6.30	$6.06
1981	5.91	6.84	6.84
1982	6.20	7.37	7.53
1983	6.57	7.84	7.86
1984	7.13	8.40	8.49
Percent change, 1980-84	+29.6%	+33.3%	+40.0%

SOURCE: Derived from data published in Woodall's Campground Directory Eastern Edition, annual.

Table 14-8. Number of recreation vehicle shipments by state, 1989.

Rank	State	Number of Shipments	Rank	State	No. Shipments Per 100,000 Residents
1	CA	44,477	1	NH	354
2	■ MI	25,997	2	OR	338
3	FL	23,861	3	AK	293
4	TX	23,346	4	■ MI	280
5	OH	22,555	5	NV	264
6	IL	16,936	6	IN	236
7	PA	15,472	7	WA	232
8	NY	13,889	8	SD	221
9	IN	13,177	9	MN	218
10	WA	11,040	10	WI	217
11	WI	10,565	11	VT	216
12	OR	9,536	12	UT	213
13	MN	9,497	13	ND	210
14	NJ	7,597	14	ID	207
15	NC	7,558	14	OH	207
16	AZ	6,846	15	MT	201
17	CO	6,252	16	WY	200
18	GA	6,094	17	NE	197
19	MA	6,054	18	DE	194
20	MD	5,896	19	AZ	193
21	TN	5,579	20	CO	188
22	LA	5,184	20	FL	188
23	VA	5,105	21	ME	181
24	IA	4,788	22	NM	176
25	OK	4,551	23	IA	169
26	AL	4,115	24	CA	153
27	NH	3,917	25	IL	145
28	UT	3,640	26	OK	141
29	KS	3,284	27	TX	137
30	NE	3,166	28	KS	131
31	SC	3,126	29	PA	129
32	AR	3,086	30	AR	128
33	KY	3,047	31	MD	126
33	CT	3,047	32	LA	118
34	NV	2,928	33	NC	115
35	NM	2,691	34	TN	113
36	MO	2,493	35	WV	107
36	MS	2,493	36	MA	102
37	ME	2,216	37	AL	100
38	ID	2,097	38	NJ	98
39	WV	1,979	39	MS	95
40	MT	1,622	39	RI	95
41	SD	1,583	39	GA	95
42	AK	1,543	40	CT	94
43	ND	1,385	41	SC	89
44	DE	1,306	42	VA	84
45	VT	1,227	43	KY	82
46	RI	950	44	NY	77
46	WY	950	45	MO	48
47	HI	198	46	HI	18
	US	374,965		US	151

NOTE: See bottom of Table 14-9 for a definition of "recreation vehicle."

SOURCES: Derived from information in Recreation Vehicle Industry Association. 1990. 1989. . .The Year in Review: Reflections on the 1980s with a Focus on the Future. Reston, VA: Recreation Vehicle Industry Association. Used with permission.

U.S. Bureau of the Census. 1989. "Five States Growing By at Least 10 Percent Since 1985, Census Bureau Says." News Release CB89-204. Washington, D.C.: U.S. Bureau of the Census.

Table 14-9. Number of recreation vehicles shipped to Michigan and surrounding states, 1973-89.

Year	Total Shipments[1]	Number of Recreation Vehicles Shipped to Retailers in...					
		IL	IN	MI	MN	OH	WI
1973	528,800	21,046	19,248	23,849	15,600	28,925	11,211
1974	295,800	11,743	8,401	13,341	8,726	13,548	6,685
1975	339,600	6,758	6,045	10,358	10,901	7,845	3,192
1976	541,100	24,891	20,454	32,195	15,205	28,300	14,123
1977	533,900	22,958	18,686	30,379	13,988	27,763	12,600
1978	526,300	20,420	18,631	31,210	13,526	25,210	10,894
1979	307,700	1,185	1,178	1,505	812	1,465	662
1980	181,400	6,022	6,567	8,109	2,921	7,909	3,029
1981	239,100	8,488	8,392	8,727	4,567	9,707	3,873
1982	258,000	10,372	9,804	11,713	5,057	10,397	4,257
1983	358,000	13,998	12,351	15,573	9,487	15,466	6,659
1984	398,200	14,136	11,787	21,344	8,163	17,123	7,327
1985	359,200	12,823	10,453	23,384	7,759	16,308	6,933
1986	379,500	15,028	12,068	24,554	7,476	23,491	7,818
1987	400,200	16,768	11,126	23,092	8,724	20,890	9,445
1988	427,300	19,143	14,357	29,868	11,964	24,100	10,042
1989	395,700	16,936	13,177	25,997	9,497	22,555	10,565

NOTE: Figures include conventional travel trailers, park trailers, 5th-wheel travel trailers, folding camping trailers, truck campers, conventional motor homes, van campers, chopped vans, and van conversions. Pick-up truck camper shells are not included.

[1] Includes shipments to foreign destinations.

SOURCE: Derived from information in Recreation Vehicle Industry Association. Marketing Report Annual Review, annual. Reston, VA: Recreation Vehicle Industry Association. Used with permission.

Central region.

Camper Characteristics

Three recent statewide studies of campers utilizing state forest campgrounds (Nelson, 1988), commercial campgrounds affiliated with MAPCO (Mahoney and Yu, 1988), and state park campgrounds (Fridgen, et. al., 1986) yielded useful profiles of the characteristics of these campgrounds' respective clienteles. These profiles are compared below to provide an understanding of the different consumer needs being met by the three types of campgrounds. First, however, it is necessary to discuss the methods employed in each study.

In the state forest study, registered campers were interviewed between June 28 and September 5, 1987. Interviews were conducted by trained MSU interviewers at 12 randomly selected campgrounds within a geographical cluster of campgrounds. Four campgrounds were in the Upper Peninsula and eight were in the Northern Lower Peninsula. Interviews were conducted on 20 afternoons during the period, with two days randomly selected per week. The sample was systematically selected with a random start. Of the 670 camping parties approached for an interview, 664 (99%) were successfully interviewed.

In the state park study, all 64 state parks that provided camping were sampled. Each campground was sampled on 10 randomly selected days between May 1 and September 30, 1985 with eight of the days falling between Memorial Day and Labor Day. The other two days were one in May prior to the Memorial Day weekend and one in September after the Labor Day weekend. Park employees distributed self-administered questionnaires on sample dates to registered campers at 11 systematically selected sites. A drop box was available for campers to return questionnaires in the park and a mailer was also attached to each questionnaire in case the drop box was not utilized. Of the 6,424 questionnaires distributed, 4,076 (63%) were returned in a usable form.

In the MAPCO study, the owners of 55 campgrounds that provided sites for transient (versus seasonal) campers distributed a self-administered questionnaire developed by MSU to their patrons. The campgrounds were selected to provide geographical representation across the state. The questionnaires were distributed to registered campers on 10 dates between July 1 and September 20, 1987, half of which were on weekends and half of which were on weekdays. On each sampled day, questionnaires were given by campground employees to the first six campers who registered between noon and 4 p.m. and to the first six who registered between 4 p.m. and 8 p.m. Of the 3,800 questionnaires distributed, 1,313 (35%) were returned in a usable form.

Weighting schemes were employed in the various studies to correct for potential "length of stay bias," i.e., overrepresentation of long-term visitors to a given campground (Lucas, 1963), "visits bias," i.e., overrepresentation of frequent visitors to a given campground (Perdue, 1986), and "campground use" bias, i.e., overrepresentation of campers contacted in little-used campgrounds when the same number of campers are surveyed in such campgrounds as in heavily-used campgrounds. The state forest study weighted to correct for length of stay bias and campground use bias, but not visits bias; the state park study weighted to correct for all three biases; the MAPCO study weighted to correct for visits bias but not length of stay bias or campground use bias. In view of the differing weighting as well as sampling procedures employed in the various studies, only major differences in the characteristics of the three types of campers will be discussed below.

Demographic and Socioeconomic Characteristics

On the average, registered campers at commercial campground were somewhat older than registered campers at state forest or state park campgrounds (Table 14-10). The pre-tax annual household incomes of state forest campers were considerably lower than those of commercial campground or state park patrons, even though the state park study was conducted two years earlier than the state forest study (Table 14-11). A third (33%) of the state forest campers had incomes of under $20,000, whereas only 17% of the state park campers and only 16% of the commercial campground campers had incomes in this range.

Commercial campgrounds were patronized by a much higher percentage of nonresident visitors than were state forest or state park campgrounds (Table 14-12). The state-owned campgrounds that were most likely to have been patronized by nonresidents were state forest and park campgrounds in the Upper Peninsula and state park campgrounds along the southwestern shore of Lake Michigan.

Camping Participation

Average length of stay was longest at state park campgrounds and shortest at commercial campgrounds (Table 14-12). The relatively short length of stay at commercial campgrounds may have been due in part to fact that such facilities were frequently only one of many lodging stops for nonresidents on long-term trips. This is supported by the fact that only 35% of the commercial campground patrons had previously visited the campground where they were surveyed, whereas 68% of the state park campers and 62% of the state forest campers had previously patronized the campgrounds where they were contacted. State forest campers tended to be weekend, destination campers, the campground where they were interviewed being the principal trip destination in the case of 75% of the respondents.

The average number of nights camped in Michigan was lowest among patrons of commercial campgrounds, due in part to the higher percentage of nonresidents using such facilities. The total number of camping nights, however, was highest among commercial campground patrons. This again suggests a long-term travel orientation among many such campers.

Participation in Other Outdoor Recreation Activities

State forest campers were more oriented to resource-based recreation activities than state park or commercial campground campers (Table 14-13). Only in swimming and off-road vehicle use did commercial campground campers participate at rates similar to those of state forest campers. The lower participation rates at commercial campgrounds may have been dictated in part by opportunities available in or near the campground. All state forest campgrounds are located on a lake or river, which is not the case for all commercial campgrounds. Also, commercial campground patrons tended to be older, a factor usually associated with reduced participation in outdoor recreation activities (U.S. Department of the Interior, 1986). Finally, commercial campgrounds served a higher proportion of nonresident campers than state forest campgrounds, and many such campers may not have been familiar with the wide range of recreation opportunities in Michigan.

State park campers generally participated in recreation activities at higher rates than commercial campground campers, but at lower rates than state forest campers. Unlike commercial campgrounds, which may not always be highly resource-oriented, state parks usually have outstanding natural amenities and facilities such as boat launches and swimming

Table 14-10. Age distributions of campers at three types of campgrounds in Michigan.

	TYPE OF CAMPGROUND		
Age	State Forest	State Park	Commercial
	------Percentage of Parties------		
< 5	8	9	6
5-12	15	17	15
13-17	10	9	8
18-24[a]	10	8	6
25-29[b]	10	10	6
30-39	20	20	20
40-49	10	10	13
50-59	7	9	12
60 and over	10	8	14
Total	100	100	100
Average age	41.2	41.2	46.1

[a] In the commercial campground study this bracket was 18-25.

[b] In the commercial campground study this bracket was 26-29.

Table 14-11. Income distributions of campers at three types of campgrounds in Michigan.

	TYPE OF CAMPGROUND		
Income Level	State Forest	State Park	Commercial
	------Percentage of Parties------		
Less than $10,000	9	4%	3
$10,000-$19,999	24	13	13
$20,000-$29,999	21	25	24
$30,000-$39,999	20	28	24
$40,000-$49,999	14	15	17
$50,000-$59,999	8	9	9
$60,000+	4	6	10
Total	100	100	100

NOTE: In state forest and commercial campground studies income pertained to 1986; in state park study income pertained to 1984.

Table 14-12. Selected characteristics of registered campers at three types of campgrounds in Michigan.

Characteristic	TYPE OF CAMPGROUND State Forest	 State Park	 Commercial
Michigan resident	94%	83%	64%
Avg. length of stay in campground	3.5 days	4.7 nights	2.7 nights
Avg. no. persons per party	3.4	3.5	3.4
Previously stayed in campground where contacted	62%	68%	35%
Avg. nights camped in Michigan during previous year[1]	13.8	12.9	9.0
Avg. total nights camped during previous year[1]	18.8	15.2	25.1

[1] Previous year was 1986 in state forest and commercial campground studies, and 1984 in state park study.

Table 14-13. Participation in recreation activities during the campground stay by campers at three types of campgrounds in Michigan.

Activity	TYPE OF CAMPGROUND State Forest	 State Park	 Commercial[1]
	----Percentage Participating----		
Swimming	73	63	66
Fishing	69	43	32
Nature observation	65	N.A.	36
Hiking[2]	52	66	21
Boating	31	29	6
Picking berries, mushrooms, etc.	25	8	N.A.
Canoeing	26	11	12
Off-road vehicle riding	7	4	7

[1] Participation in recreation activities was not measured in the 1987 commercial campground study. These results are from the 1984 commercial campground study (Stynes and Mahoney, 1986:14).

[2] This category was "hiking/walk trails" in the state park study and "hiking/backpacking" in the commercial campground study.

beaches. On the other hand, the higher density of campsites at state park campgrounds compared to state forest campgrounds may encourage more social activity and less focus on the surrounding natural amenities.

Equipment

Commercial campground and state park campers tended to have more expensive, self-contained shelter types than did state forest campers (Table 14-14). Trailers, motor homes, fully equipped truck campers, and van or bus conversions accounted for 63% of the shelters of commercial campground campers and 44% of the shelters of state park campers, but only 30% of the shelters of state forest campers. This suggests a "roughing it" appeal at state forest campgrounds that fits with the more primitive image of forest camping. It also reflects the non-availability of utility hookups at state forest campgrounds, the availability of electrical hookups at most state park campgrounds, and the availability of full hookups at many commercial campgrounds.

Utilization of Various Types of Campgrounds

The distribution of camping nights in Michigan during the previous year also provides some clues as to the types of camping opportunities preferred by each type of campground patron (Table 14-15). State forest campers appear to have been somewhat more loyal to state forest campgrounds than state park campers were to state parks, and much more loyal than commercial campground campers were to commercial campgrounds. Commercial campground patrons appear to have been most loyal to Michigan state parks. This suggests that commercial campgrounds may provide the easy access and convenience that many campers, particularly those who are nonresidents, desire on their way to a destination state park. This hypothesis is supported by the fact that 43% of the commercial campground patrons were on a trip that involved staying at least one night in a campground other than the commercial campground in which they were contacted.

State forest campers appear to be the most distinct market segment served by the three types of campgrounds, probably due to the fact that state forest campgrounds do not provide the man-made amenities and services found at either state park or commercial campgrounds. Instead, these campgrounds generally provide uncrowded, rustic conditions, large campsites, and close proximity to forest and water resources.

Expenditures

Estimates of the expenditures of the three types of campers in preparation for their camping trips, en route to the campgrounds in which they were contacted, and in the local areas surrounding these campgrounds are compared in Table 14-16. Spending in preparation for the trip was highest among state forest and park campers, whereas en route spending was highest among commercial campground campers. Spending in the local area appears to have been far higher among state forest campers than among the other types of campers. However, the differing research procedures employed in the three studies make comparisons of local spending estimates particularly problematic. In the state forest study, data on local spending were obtained by asking respondents to estimate their expenditures during the last 24 hours within 20 miles of the campground in the case of Lower Peninsula campgrounds, and within 30 miles in the case of Upper Peninsula campgrounds. The resulting means were then multiplied by average length of stay at the campground (3.5 days) to estimate average per trip expenditures in the local area. In the other studies, respondents were asked to estimate local

Table 14-14. Shelters type(s) used by campers at three types of campgrounds in Michigan.

Shelter Type	TYPE OF CAMPGROUND State Forest	 State Park	 Commercial
	----------Percentage Using--------		
Tent	56	28	24
Motor home/travel trailer/ pickup camper/van or bus conversion/5th wheeler	30	44	63
Tent trailer	11	23	16
Other[1]	2	2	1

NOTE: Percentages may add to more than 100 since more than one shelter type may have been used on the same site.

[1] Included "car/unconverted van" and "open air" in the state forest study; "pickup cover/unconverted van" in the state park study; and "pickup cover" in the commercial campground study.

Table 14-15. Utilization of different tvpes of campgrounds in Michigan during the previous year by campers at three types of campgrounds in Michigan.

Type of Campground	TYPE OF CAMPGROUND State Forest	 State Park	 Commercial
	-------Percentage of Nights--------		
State forest	66	5	4
State park	12	52	39
Other public campgrounds	9	12	17
Commercial	3	16	22
All other camping in Michigan[1]	10	15	18
Total	100	100	100

NOTE: "Previous year" was 1986 in the state forest and commercial campground studies, and 1984 in the state park study.

[1] Includes camping on public land not specifically designated as a campground, roadsides, private land, etc., non-profit campgrounds such as those operated by churches and fraternal lodges, and camping on private land.

Table 14-16. Average per trip expenditures by campers at three types of campgrounds in Michigan.

	TYPE OF CAMPGROUND		
Spending Location	State Forest	State Park	Commercial
At home in preparation	$ 95.69	$ 92.20	$ 60.50
En route to the campground while still more than 20 miles away[1]	39.56	33.55	67.50
In the local area (within 20 miles of the campground)[2]	100.34	45.95	34.90
Total	$235.59	$171.70	$162.90

NOTE: The state forest and commercial campground studies were conducted in 1987; the state park study was conducted in 1985.

[1] Does not include spending after leaving the campground.

[2] In the state forest study, data on local spending were obtained by asking respondents to estimate their expenditures during the last 24 hours within 20 miles of the campground in the case of Lower Peninsula campgrounds, and within 30 miles in the case of Upper Peninsula campgrounds. The resulting means were then multiplied by average length of stay at the campground (3.5 days) to estimate average per trip expenditures in the local area. In the other studies, respondents were asked to estimate local spending during their entire stay at the campground. None of the studies accounted for expenditures campers may have made in the campground for such items as camping fees, souvenirs, services, food, etc.

spending during their entire stay at the campground.

Because interviews were conducted only in the case of state forest campers, and because respondents were asked to recall expenditures only over a 24-hour period, the estimates provided by state forest campers may have been the most accurate. On the other hand, some such respondents may have inadvertently included expenditures incurred prior to the 24-hour period. Conversely, in the state park and commercial campground studies underestimates of expenditures may have resulted from some respondents' failure to accurately keep track of or recall expenditures made over the duration of their stays.

The differing characteristics of the three types of campgrounds and of the types of campers who use them, however, should make us expect some actual differences in local spending. For example, many commercial campgrounds and some state park campgrounds have stores that enable campers to purchase food, souvenirs, sporting goods, bait, and boat rentals, but such outlets are not present in state forest campgrounds. This may explain the fact that 60% of the reported local expenditures of state forest campers were on groceries and sporting goods, compared to only 46% of the local expenditures of state park patrons and only 34% of the local expenditures of commercial campground patrons. Similarly, since state forest campers were less likely than state park or commercial campground campers to own self-contained camping units with refrigeration equipment, they may have had a greater propensity than their counterparts to purchase groceries in nearby towns. This may explain the fact that 46% of the reported local expenditures of state forest campers were on groceries, compared to 38% of the local expenditures of state park campers and 29% of the local expenditures of commercial campground patrons.

Conclusions

Further research is needed to provide a more complete picture of camping in Michigan. The use and characteristics of campers in non-MAPCO commercial campgrounds, local public, and group campgrounds are unknown. Furthermore, little research as been conducted on dispersed camping in Michigan. Finally, a lack of uniformity in record keeping makes in-depth comparisons between camping providers difficult. A more uniform system of reporting and making camping data more available would provide information needed to more efficiently develop tourism plans and facilities in Michigan.

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CHAPTER 15

RECREATIONAL BOATING IN MICHIGAN

Daniel R. Talhelm

Introduction

According to the U.S. Coast Guard, Michigan leads the nation in number of registered watercraft (Table 15-1). This can be attributed to the relatively easy access Michigan's nine million residents have to the state's Great Lakes waters, thousands of inland lakes, and thousands of miles of rivers (Table 15-2). In 1986, an estimated 598,000 registered boats were used in Michigan on 30 million boat-days, which provided 76 million person-days of recreational activity (Table 15-3).

Not only is Michigan a mecca for boaters, but boating is one of the larger "industries" in Michigan's economy. Owners of registered boats spent an estimated $1.83 to $2 billion in Michigan for boating in 1986 (Table 15-4). Actual 1986 spending was probably about $2 billion, since the statistics in Table 15-4 omit some boat sales in Michigan that are apparently included in the figures presented in Table 15-5. Furthermore, since these expenditures had a secondary impact as a result of the dollars being re-spent within the state, boating had a total impact of about $3 to $4 billion on Michigan's economy in 1986.

This chapter presents an overview of recreational boating in Michigan, drawing upon both primary and secondary sources of information on this subject. The chapter begins with descriptions of the nature of boating facilities in Michigan and the characteristics of Michigan's watercraft fleet. This is followed by a discussion of demand-side aspects of boating, including the characteristics of boat owners, patterns and trends in boating activity, the economic impact of boating, and forecasts of boating activity.

Boating Facilities in Michigan

Michigan's boating facilities include recreational harbors of refuge, public access sites, and marinas. Michigan currently has 86 Great Lakes recreational harbors (Figure 15-1), 1,406 public access sites (Table 15-2), and 795 public and private marinas, yacht clubs, and similar facilities on the Great Lakes or inland waters which are under lease or permit with the State in accordance with the Great Lakes Submerged Lands Act or the Inland Lakes and Streams Act. The latter number does not include a significant but unknown number of illegally-operating facilities or facilities not covered by either Act, i.e., that are on a canal or upland basin off the Great Lakes (personal communication, Thomas Bennett, MDNR).

Consistent counts over time of the numbers of marinas and marinas slips are not available. However, it is clear that the number and capacity of marinas has been rapidly growing for the last decade or two. An inventory of Great Lakes marinas in 1983, from aerial photographs of the coastline, estimated that Michigan had 746 marinas containing 36,651 slips serving the Great Lakes (Tables 15-6 and 15-7; Figure 15-2). Condominium marinas, in which slips are privately owned by the persons who keep their boats there, may have been the most rapidly growing type of marina in the late 1980s. A recent study of marina needs (Talhelm, et. al., 1988c) showed that marinas are still in short supply. The 1986 market for commercial marinas would have supported up to twice the number of Great Lakes marina slips and up to three times the number of inland marina slips available at that time. Many marinas have long waiting lists of people who wish to keep their boats there.

Table 15-1. Number of numbered boats by state, 1988 and 1989.

State	1989 Rank	No. Numbered Boats 1989	1988	Scope of Current Boat Numbering System
■Michigan	1	856,749	788,453	All motorboats; all other boats over 16' in length
California	2	752,836	734,817	All motorboats; sailboats over 8' in length
Florida	3	710,831	675,474	All motorboats
Minnesota	4	706,085	692,528	All watercraft with exceptions[b]
Texas	5	603,709	607,111	All motorboats
Wisconsin	6	482,336	480,821	All motorboats; sailboats over 12' in length
New York	7	419,956	385,000[a]	All motorboats
Ohio	8	380,412	375,194	All watercraft
Illinois	9	339,979	326,483	All motorboats; sailboats over 12' in length
South Carolina	10	302,282	282,611	All motorboats
Louisiana	11	283,467	293,390	All motorboats
Pennsylvania	12	279,159	266,315	All motorboats
Georgia	13	270,134	264,698	All motorboats; sailboats 12' or more in length
North Carolina	14	267,446	256,264	All motorboats
Missouri	15	263,841	264,652	All motorboats; sailboats over 12' in length
Massachusetts	16	250,250	224,115	All motorboats
Tennessee	17	233,403	224,709	All motorboats and sailboats
Indiana	18	218,228	213,585	All motorboats
Alabama	19	214,151	212,406	All motorboats, sailboats, and rental boats
Virginia	20	196,119	186,426	All motorboats
Washington	21	195,791	179,066	All motorboats; sailboats 16' or more in length
Oklahoma	22	184,703	181,335	All watercraft
Maryland	23	173,523	168,763	All motorboats
Mississippi	24	170,515	159,413	All motorboats and sailboats
Oregon	25	165,771	159,999	All motorboats; sailboats 12' or more in length
Iowa	26	158,258	187,279	All watercraft with exceptions[c]
New Jersey	27	158,253	173,208	All motorboats; all other boats over 12' in length
Arkansas	28	146,490	147,050	All motorboats with exceptions[d]
Arizona	29	142,858	120,500	All watercraft
Maine	30	132,039	123,723	All motorboats
Kentucky	31	113,166	114,571	All motorboats
Connecticut	32	98,254	94,819	All motorboats; sailboats 19.5' or more in length
Kansas	33	89,888	89,664	All motorboats and sailboats
Colorado	34	82,653	82,783	All motorboats and sailboats
New Hampshire	35	77,229	14,600[a]	All watercraft
Idaho	36	63,421	61,392	All motorboats
Utah	37	58,464	45,311	All motorboats and sailboats
Nebraska	38	57,268	55,525	All motorboats
South Dakota	39	49,674	45,867	All motorboats; all other boats over 12' in length
West Virginia	40	49,356	45,336	All motorboats
North Dakota	41	43,507	40,495	All motorboats
Delaware	42	41,019	41,563	All motorboats
Nevada	43	40,603	38,279	All motorboats
Montana	44	40,000[a]	34,343	All motorboats; sailboats 12' or more in length
Vermont	45	37,437	36,209	All motorboats
Rhode Island	46	36,775	29,855	All motorboats
New Mexico	47	35,481	34,549	All motorboats and sailboats
Alaska	48	29,665	28,945	All motorboats used on federal waters
Wyoming	49	22,476	21,965	All motorboats
Hawaii	50	13,501	14,250	All motorboats and sailboats over 8' in length
Dist. of Columbia	51	4,895	4,054	All watercraft
Total		10,744,306	10,329,763	

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[a] Estimate.

[b] Minnesota excludes nonmotorized boats 9' in length and under, duckboats during duck hunting season, and riceboats during harvest season.

[c] Iowa excludes inflatables under 7' in length and canoes/kayaks under 13' in length.

[d] Arkansas excludes boats with motors of 10 HP or less used only during daylight.

SOURCE: U.S. Coast Guard. 1990. Boating Statistics 1989. Commandant Publication P16754.3. Washington, D.C.: U.S. Coast Guard.

Table 15-2. Water resources by Michigan county.

COUNTY	INLAND LAKES OVER 50 ACRES IN SIZE[a]		STREAM MILEAGE[b]			MILES OF GREAT LAKE SHORELINE[c]	NUMBER OF PUBLIC ACCESS SITES[d]
	No. Lakes	Combined Area in Acres	Main-stream	Tribu-taries	Total		
Alcona	13	11,842	31	331	362	27.4	8
Alger	51	8,679	101	608	709	120.4	9
Allegan	29	7,031	72	445	517	24.0	28
Alpena	13	12,747	76	225	301	61.0	9
Antrim	23	17,879	28	236	264	26.5	32
Arenac	0	0	40	116	156	47.3	9
Baraga	38	6,651	101	595	696	69.9	22
Barry	37	8,565	34	238	272	0.0	33
Bay	1	112	28	22	50	36.2	8
Benzie	18	17,016	53	51	104	24.8	23
Berrien	11	2,271	83	417	500	13.7	13
Branch	34	7,468	45	280	325	0.0	17
Calhoun	28	3,688	84	456	540	0.0	17
Cass	47	8,250	18	211	229	0.0	24
Charlevoix	19	22,266	20	195	215	102.4	20
Cheboygan	22	48,523	63	357	420	34.5	23
Chippewa	34	9,015	97	703	800	456.0	26
Clare	29	4,041	29	302	331	0.0	16
Clinton	4	484	62	257	319	0.0	6
Crawford	10	2,730	71	133	204	0.0	31
Delta	20	3,092	187	327	514	198.7	24
Dickinson	30	4,992	168	477	645	0.0	26
Eaton	5	407	51	156	207	0.0	5
Emmet	9	8,288	31	67	98	75.0	7
Genesee	17	3,413	59	296	355	0.0	5
Gladwin	15	6,349	72	401	473	0.0	12
Gogebic	78	27,253	168	1,036	1,204	30.1	15
Grand Traverse	22	13,464	18	150	168	55.5	26
Gratiot	6	1,165	45	196	241	0.0	3
Hillsdale	21	2,776	19	279	298	0.0	9
Houghton	25	21,391	116	807	923	50.6	29
Huron	1	76	56	886	942	92.5	13
Ingham	2	533	42	192	234	0.0	4
Ionia	8	1,727	73	391	464	0.0	15
Iosco	23	10,102	25	234	259	36.2	11
Iron	87	21,376	167	735	902	0.0	31
Isabella	6	1,511	20	310	330	0.0	3
Jackson	42	8,523	40	284	324	0.0	9
Kalamazoo	32	8,477	44	321	365	0.0	19
Kalkaska	22	3,733	83	201	284	0.0	26
Kent	42	5,786	81	691	772	0.0	24
Keweenaw	14	4,957	19	252	271	100.5[e]	11
Lake	17	2,639	99	151	250	0.0	36
Lapeer	18	3,448	44	550	594	0.0	8
Leelanau	15	17,003	0	58	58	151.4	17

Lenawee	20	3,934	38	584	622	0.0	8
Livingston	61	7,725	54	415	469	0.0	11
Luce	29	12,478	133	525	658	31.0	29
Mackinac	34	21,467	55	292	347	298.4	22
Macomb	2	895	44	252	296	26.5	6
Manistee	9	7,041	77	199	276	25.4	23
Marquette	87	22,401	221	1,685	1,906	79.4	62
Mason	20	8,180	93	145	238	27.5	26
Mecosta	28	8,497	50	243	293	0.0	25
Menominee	17	3,803	241	574	815	41.3	17
Midland	6	2,409	66	243	309	0.0	2
Missaukee	13	4,287	21	188	209	0.0	7
Monroe	3	265	65	394	459	56.6	10
Montcalm	35	5,099	15	462	477	0.0	29
Montmorency	28	8,846	50	256	306	0.0	20
Muskegon	21	9,966	25	369	394	26.9	12
Newaygo	34	7,816	58	426	484	0.0	20
Oakland	95	17,792	50	419	469	0.0	36
Oceana	11	2,938	34	190	224	27.4	5
Ogemaw	28	4,122	50	331	381	0.0	28
Ontonagon	9	10,391	138	1,144	1,282	56.2	8
Osceola	15	1,611	44	257	301	0.0	19
Oscoda	12	2,380	35	184	219	0.0	10
Otsego	28	4,905	29	169	198	0.0	19
Ottawa	12	4,709	50	257	307	25.0	15
Presque Isle	26	13,504	35	266	301	68.7	20
Roscommon	19	37,536	23	181	204	0.0	9
Saginaw	2	1,400	147	446	593	0.0	8
Saint Clair	6	385	149	810	959	164.2	12
Saint Joseph	38	8,136	114	178	292	0.0	18
Sanilac	0	0	30	977	1,007	40.5	4
Schoolcraft	79	23,121	168	566	734	46.1	27
Shiawassee	6	631	27	280	307	0.0	0
Tuscola	5	908	38	146	184	20.1	7
Van Buren	34	4,737	33	291	324	13.4	28
Washtenaw	38	6,810	41	331	372	0.0	18
Wayne	7	1,886	62	329	391	75.4	10
Wexford	10	6,297	33	221	254	0.0	14
Total	1,965	671,047	5,499	30,851	36,350	2,984.6[e]	1,406

[a] SOURCE: Michigan Department of Natural Resources. 1974. "Michigan Lake Inventory." Lansing, MI: Michigan Department of Natural Resources, Office of Planning Services.

[b] SOURCE: Brown, C.J.D. 1944. "Michigan Streams-Their Lengths, Distribution and Drainage Areas." Michigan Conservation. 13(5):9-10.

[c] SOURCE: Humphrys, C.R., Ali Razaque, J.O. Veateh, and Rex Yu. n.d. Preliminary Report: Statistical Data Related to Michigan Water Resources and Water Uses. Dept. of Resource Development, Michigan State University. East Lansing.

[d] SOURCE: Michigan Dept. of Natural Resources. 1990. "Updated Public Access Site Master List." Serial No. 624-90. Recreation Division. Lansing, MI: Michigan Dept. of Natural Resources.

[e] Does not include shoreline of Isle Royale.

Table 15-3. Highlights of the 1986 Michigan Recreational Boating Survey.

BOATING USE	Total days on which boats were used	30,300,000 boat-days
	Total boat use days underway	26,600,000 boat-days
	Great Lakes boat use	7,500,000 boat-days
	Inland lake boat use	16,300,000 boat-days
	River and stream boat use	2,800,000 boat-days
	Days boat used but not underway	3,700,000 boat-days
	Total recreation days	76,000,000 person-days
BOATING TRENDS	Total days underway if measured the same way as in 1980	approx. 25,000,000 boat-days
	Inland waters use	approx. 17,500,000 boat-days
	Great Lakes use	7,500,000 boat-days
	Total increase from 1980	48%
	Inland boat-days increase	50%
	Great Lakes boat-days increase	41%
ACTIVITIES WHILE UNDERWAY	Fishing	13,900,000 boat-days (52%)
	Cruising/pleasure boating	9,700,000 boat-days (36%)
	Waterskiing	2,700,000 boat-days (10%)
	Other	200,000 boat-days (1%)
BOATING FLEET	Working 1986 registration list	710,323 boats
	Expired registrations on list	72,823 boats
	Registrations valid in 1986	637,500 boats
	Boats 0'-16' long	459,998 boats (72%)
	17'-20' long	108,576 boats (17%)
	21'-26' long	48,907 boats (8%)
	over 26' long	20,019 boats (3%)
	Registered boats active in 1986	598,000 boats
	Outboard	397,500 boats (66%)
	Inboard and inboard/outboard	112,500 boats (19%)
	Sail	39,000 boats (7%)
	Other	49,000 boats (8%)
	Boat kept at: home	369,000 boats
	cottage	140,000 boats
	marinas	51,000 boats
	other	40,000 boats
	Boats used on Great Lakes	245,000 boats
	Boats used on inland lakes	425,000 boats
	Boats used on rivers or streams	133,000 boats
ECONOMICS	Total expenditures	$1,830,000,000
	Trip-related expenditures	$1,170,000,000
	Craft-related expenditures	$ 410,000,000
	Craft purchased (new and used)	$ 250,000,000
LAUNCH SITE USE	Launch site visits	5,900,000 visits
	Public sites	5,000,000 visits
	Private sites	900,000 visits
	Sites with Great Lakes access	2,400,000 visits
	Inland lake sites	2,800,000 visits
	River and stream sites	700,000 visits
BOAT OWNERS	Boats owned by Michigan residents	609,000 boats
	Boats owned by nonresidents	29,000 boats

Table 15-3. Highlights of the 1986 Michigan Recreational Boating Survey (continued).

MARINA USE	Boats using marinas at least once	84,000 boats
	Boats usually kept at marinas	51,000 boats
	Occupying a seasonal slip	40,000 boats
	Not occupying a seasonal slip	11,000 boats
	Boats not usually kept at marinas	33,000 boats
MARINA NEEDS	22,000 boats now using seasonal marina space would rather rent elsewhere (i.e., 30% of 73,000):	
	Season-long users wanting to rent elsewhere:	
	19% of 30,000 at Great Lakes marinas	6,000 transfers
	11% of 10,000 at inland marinas	1,000 transfers
	Temporary users wanting to rent elsewhere:	
	46% of 33,000 temporary users	15,000 transfers
	Up to 53,000 new occupants of seasonal marina spaces from other sources under ideal conditions:	
	Of 11,000 boats using auxiliary marina spaces, 23% would rent slips if available:	3,000 new renters
	Of 514,000 boats not using marinas, 5% would rent slips if available:	26,000 new renters
	Potential from non-boat owners	24,000 new boaters
THE SURVEY	Registered boats surveyed	10,089 registrants
	Usable returns	5,012 questionnaires

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1988. 1986 Michigan Recreational Boating Survey. Travel, Tourism, and Recreation Resource Center, Michigan State University. East Lansing.

Table 15-4. Estimated spending by registered Michigan boat owners on boating in Michigan in 1986.

	Estimated 1981 Spending[1]	Estimated 1986 Spending[2]	1986 Survey Estimates (000s)	Estimated 1986 Total Spending
CRAFT-RELATED EXPENDITURES				
Great Lakes	$849.21/boat	$1,025.04/boat	247 boats	$ 253,185,000
Inland waters	$259.96/boat	$313.78/boat	489 boats	$ 153,438,000
TRIP-RELATED EXPENDITURES				
Great Lakes	$46.84/boat-day	$56.54/boat-day	7,524 days	$ 425,407,000
Inland waters	$32.37/boat-day	$39.07/boat-day	19,061 days	$ 744,713,000
PURCHASES OF NEW AND USED CRAFT				
New	$41,000,000			$ 184,000,000[3]
Used	$64,000,000			$ 66,000,000[4]
APPROXIMATE TOTAL				$1,830,000,000

[1] From Stynes, Daniel J., Gene L. Brothers, Donald F. Holecek, and Dave Verbyla. 1983. Spending Patterns and Economic Impacts of Michigan Registered Boat Owners. Michigan Sea Grant Report MICHU-SG-83-210. Ann Arbor, MI: Michigan Sea Grant Publications.

[2] Derived by extrapolating the 1981 spending estimates by 20%--the 1981 to 1986 change in the U.S. consumer price index for all goods and services.

[3] Sales by boat dealers (firms whose primary business is marine sales), excluding boat sales by more general retailers. Information provided by Michigan Department of Treasury.

[4] Derived from tax receipts from sales of used recreational vehicles. Information provided by Michigan Department of State.

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1988. 1986 Michigan Recreational Boating Survey. Travel, Tourism, and Recreation Resource Center, Michigan State University. East Lansing.

Table 15-5. Estimated dollar volume of boating equipment sales in Michigan, 1980-1988.

YEAR	Boats[1] ($000)	Outboard Motors ($000)	Boat Trailers ($000)	Marine Accessories ($000)	Total ($000)
1980	104,670	28,829	3,839	41,400	178,738
1981	134,681	25,128	4,059	51,717	215,585
1982	133,922	27,319	4,074	46,804	212,119
1983	192,269	34,697	4,987	54,230	286,183
1984	303,717	46,577	6,019	58,764	415,077
1985	340,286	47,486	6,218	63,906	457,896
1986	426,927	60,441	7,614	66,953	561,935
1987	447,906	72,939	9,903	84,644	615,392
1988	483,003	69,926	12,064	100,487	665,480

[1] Retail value of inboard boats, inboard/outdrive boats, outboard boats, and auxiliary and non-powered sailboats.

SOURCE: National Marine Manufacturer Association. Boating [Year]: A Statistical Report on America's Top Family Sport, annual. Chicago: National Marine Manufacturer Association.

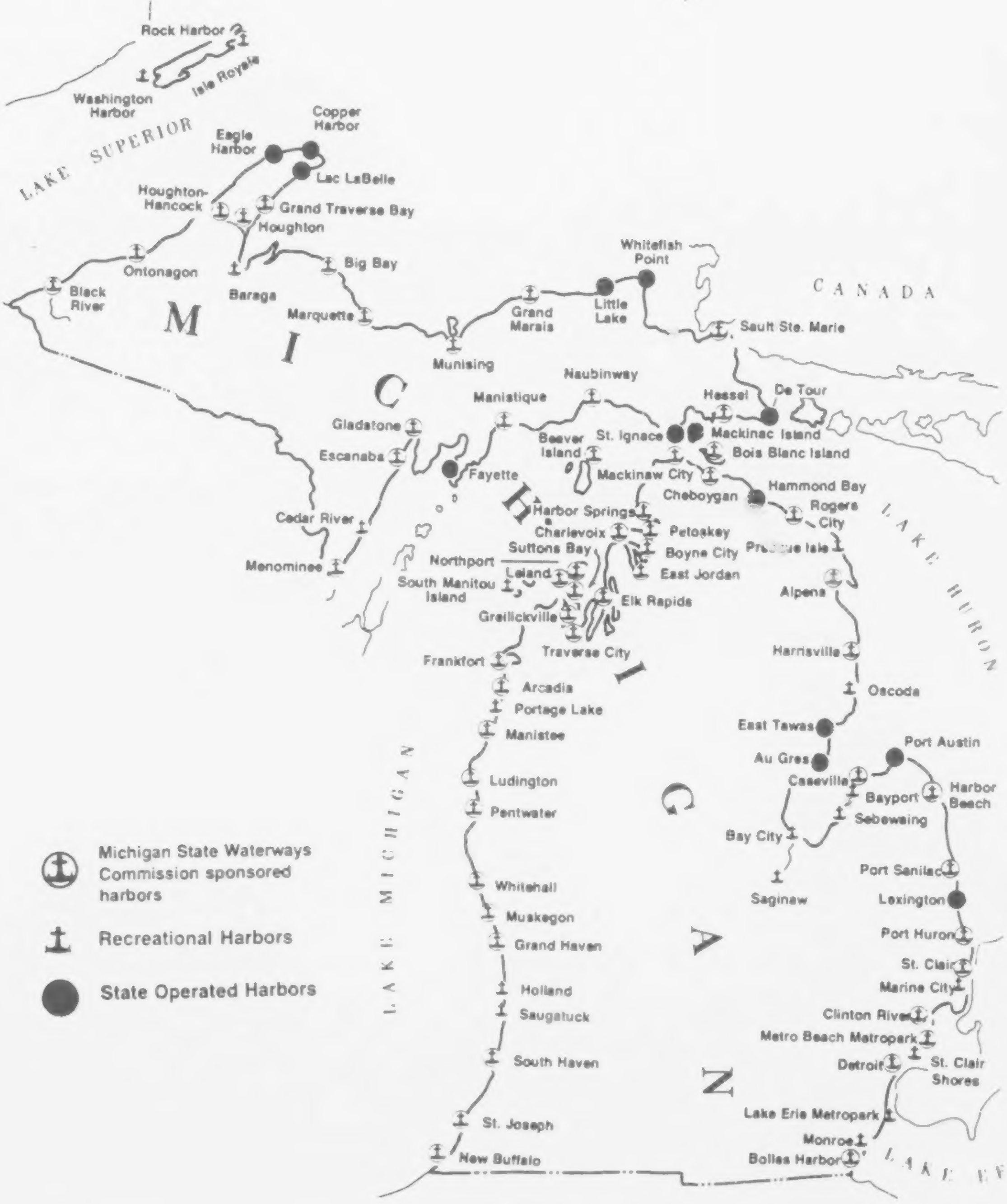

Rock Harbor
Isle Royale
Washington Harbor
LAKE SUPERIOR
Eagle Harbor
Copper Harbor
Lac LaBelle
Houghton-Hancock
Grand Traverse Bay
Houghton
Ontonagon
Baraga
Big Bay
Black River
Marquette
Munising
Grand Marais
Little Lake
Whitefish Point
CANADA
Sault Ste. Marie
Naubinway
Hessel
De Tour
Manistique
Gladstone
Escanaba
Fayette
Beaver Island
St. Ignace
Mackinac Island
Bois Blanc Island
Mackinaw City
Cheboygan
Hammond Bay
Rogers City
Cedar River
Menominee
Harbor Springs
Charlevoix
Petoskey
Suttons Bay
Boyne City
Presque Isle
Northport
Leland
East Jordan
South Manitou Island
Elk Rapids
Alpena
Greilickville
Traverse City
Frankfort
Arcadia
Portage Lake
Manistee
Harrisville
Oscoda
East Tawas
Au Gres
Port Austin
Caseville
Bayport
Harbor Beach
Sebewaing
Bay City
Saginaw
Ludington
Pentwater
Whitehall
Muskegon
Grand Haven
Holland
Saugatuck
South Haven
St. Joseph
New Buffalo
Port Sanilac
Lexington
Port Huron
St. Clair
Marine City
Clinton River
Metro Beach Metropark
Detroit
St. Clair Shores
Lake Erie Metropark
Monroe
Bolles Harbor
LAKE HURON
LAKE MICHIGAN
LAKE ERIE
MICHIGAN
Michigan State Waterways Commission sponsored harbors
Recreational Harbors
State Operated Harbors

Figure 15-1. Locations of Great Lake recreational harbors in Michigan, 1990.

SOURCE: Michigan Department of Natural Resources. 1990. *Michigan Harbors Guide 1990*. Lansing, MI: Michigan Dept. of Natural Resources, Recreation Division.

Table 15-6. Estimated supply of Great Lakes recreational marina facilities in Michigan, by Great Lake served, 1983.

Facility	Lake Michigan	Lake Superior	Lake Huron	Lake St. Clair	Lake Erie	State Total
Number of marinas	234	37	212	198	65	746
Number of marina slips						
Less than 20 feet	3,055	167	2,236	5,371	1,916	12,745
20-30 feet	3,715	186	2,477	5,399	2,467	14,244
30-40 feet	1,974	63	1,046	2,365	740	6,188
More than 40 feet	1,250	85	705	1,199	235	3,474
Total	9,994	501	6,464	14,334	5,358	36,651
No. buoy moorings	561	5	53	0	0	619
Feet of broadside mooring	31,656	1,0248	34,500	22,560	6,744	105,708
Number of marinas with...						
Launch ramp facilities	97	24	129	70	37	357
Haul-out facilities	55	7	29	69	21	181
Open dry storage facilities	122	20	120	95	39	396
Covered dry storage facilities	77	10	67	68	22	244

NOTE: Data are based on aerial photographs taken June-September, 1983.

SOURCE: Holecek, Donald F. and Gene L. Brothers. 1983. Documentation and Analysis of Temporal and Spatial Changes in Marinas Serving Michigan's Great Lakes. Report prepared for Waterways Division and Land Resource Programs Division, Michigan Dept. of National Resources. Department of Park and Recreation Resources, Michigan State University. East Lansing.

Table 15-7. Estimated supply of Great Lakes recreational marina facilities by Michigan county, 1983.

COUNTY	NO. MAR-INAS	NUMBER OF MARINA SLIPS					NO. BUOY MOORINGS	FEET OF BROADSIDE MOORING	NUMBER OF MARINAS WITH...			
		<20'	20'-30'	30'-40'	>40'	Total			Launch Ramp Facilities	Haul Out Facilities	Open Dry Storage Facilities	Covered Dry Storage Facilities
Alcona	1	0	0	0	14	14	0	0	1	0	1	0
Alger	2	0	0	0	0	0	5	1,248	2	1	2	2
Allegan	18	200	54	127	329	710	0	528	0	3	9	6
Alpena	3	6	4	63	85	158	0	624	3	2	3	3
Antrim	2	44	12	0	12	68	6	0	1	0	1	0
Arenac	10	271	120	16	18	425	0	1,752	8	0	6	3
Baraga	4	54	73	6	0	133	0	264	4	0	4	0
Bay	17	188	781	347	255	1,571	0	1,584	11	6	13	9
Benzie	7	9	121	48	26	204	15	936	2	1	4	2
Berrien	12	850	492	304	118	1,764	19	1,296	6	6	8	7
Charlevoix	29	159	217	228	115	719	59	2,736	12	5	10	7
Cheboygan	7	48	95	55	17	215	0	1,608	5	4	6	6
Chippewa	61	515	212	68	13	808	0	9,480	44	2	42	15
Delta	16	84	43	20	0	147	32	5,016	10	1	9	3
Emmet	7	152	62	96	71	381	64	1,752	2	3	4	4
Gogebic	2	0	0	0	0	0	0	1,296	1	0	0	0
Gr. Traverse	3	57	107	11	0	175	0	1,128	1	0	0	1
Houghton	14	34	44	31	52	161	0	1,728	6	2	7	4
Huron	30	492	243	83	65	883	0	2,904	18	5	19	10
Iosco	14	319	228	84	0	631	9	4,716	8	2	10	7
Keweenaw	6	14	4	0	0	18	0	1,536	4	0	0	0
Leelanau	11	26	271	87	33	417	77	1,248	7	4	5	3
Luce	0	0	0	0	0	0	0	0	0	0	0	0
Mackinac	41	321	120	30	86	557	34	7,320	22	2	11	5
Macomb	85	3,279	3,046	1,174	452	7,951	0	10,224	36	37	44	33
Manistee	20	295	254	39	41	629	0	2,520	10	4	13	6
Marquette	4	39	50	16	9	114	0	3,696	3	2	2	2
Mason	9	49	182	102	9	342	0	1,824	3	1	6	4
Menominee	3	0	8	25	8	41	45	936	1	0	1	1
Monroe	32	1,229	1,172	298	111	2,810	0	4,080	22	10	21	13
Muskegon	23	501	388	130	103	1,122	193	2,952	10	6	12	9
Oceana	9	49	48	38	36	171	3	2,280	5	1	4	4
Ontonagon	2	13	15	4	21	53	0	168	1	1	2	0
Ottawa	42	327	1,121	700	269	2,417	48	3,576	18	17	23	15
Presque Isle	3	12	22	40	18	92	0	960	3	0	2	2
Saint Clair	94	1,052	1,567	787	251	3,657	0	11,352	29	22	39	33
Sanilac	3	13	98	48	28	187	0	888	1	1	2	2
Schoolcraft	1	0	11	0	12	23	0	72	0	0	0	0
Tuscola	4	44	96	6	0	146	0	0	2	1	2	1
Van Buren	17	222	322	11	66	621	0	2,256	6	3	11	4
Wayne	78	1,778	2,541	1,066	731	6,116	0	7,224	29	26	38	18
Total	746	12,745	14,244	6,188	3,474	36,651	619	105,708	357	181	396	244

NOTE: Data are based on aerial photographs taken June-September, 1983.

SOURCE: Holecek, Donald F. and Gene L. Brothers. 1983. Documentation and Analysis of Temporal and Spatial Changes in Marinas Serving Michigan's Great Lakes. Report prepared for Waterways Division and Land Resource Programs Division, Michigan Dept. of Natural Resources. Department of Park and Recreation Resources, Michigan State University. East Lansing.

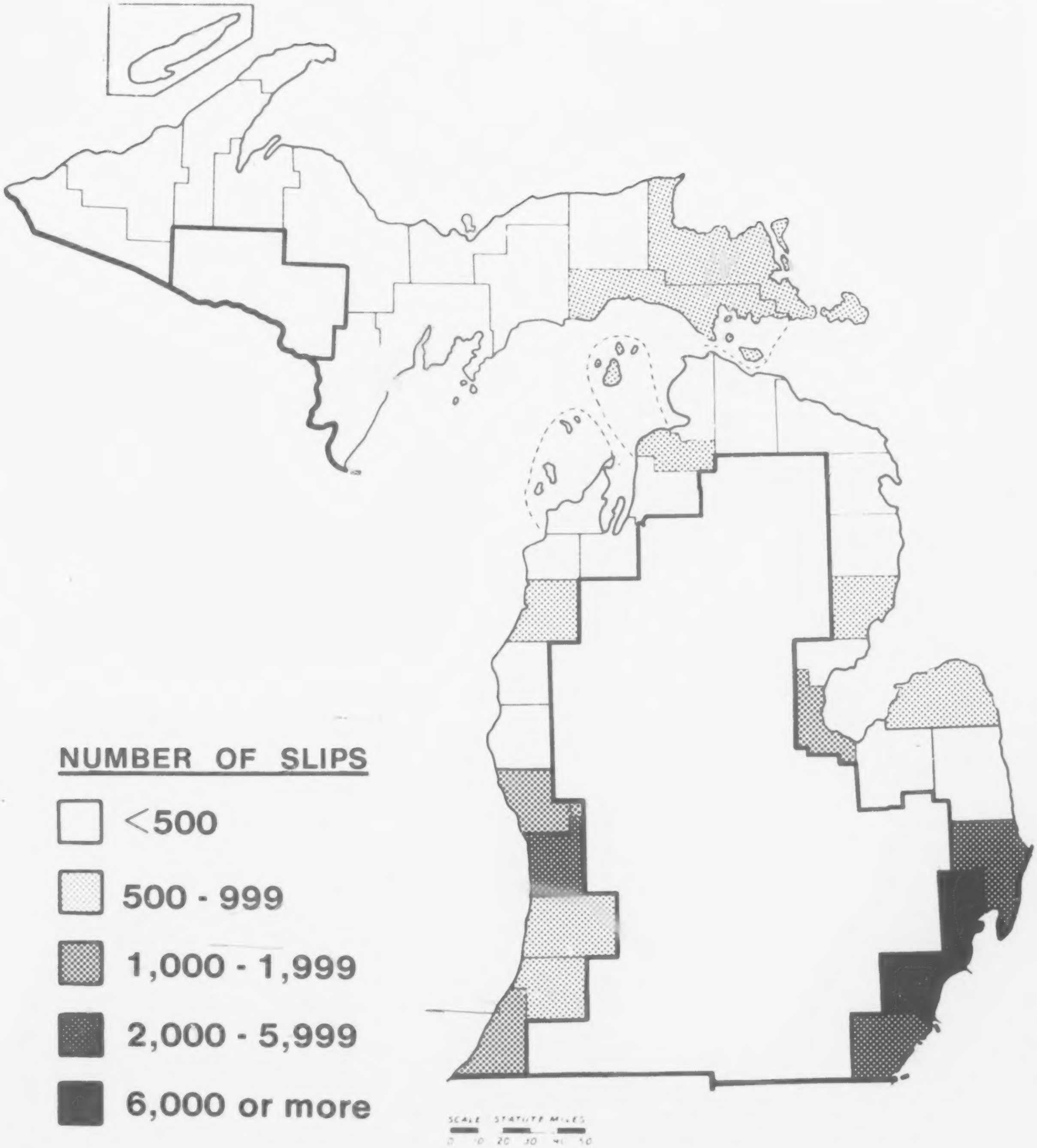

NUMBER OF SLIPS
☐ <500
▨ 500 - 999
▨ 1,000 - 1,999
■ 2,000 - 5,999
■ 6,000 or more
SCALE STATUTE MILES
0 10 20 30 40 50

Figure 15-2. Estimated number of Great Lake marina slips by Michigan county, 1983.

SOURCE: Holecek, Donald F. and Gene L. Brothers. 1983. *Documentation and Analysis of Temporal and Spatial Changes in Marinas Serving Michigan's Great Lakes.* Report to Michigan Dept. of Natural Resources. Dept. of Park and Recreation Resources, Michigan State University. East Lansing.

Michigan's Watercraft Fleet

In 1986, 710,323 boats were listed on the Michigan Secretary of State's boat registration files (Table 15-3). However, this number included 72,823 expired registrations that were not renewed. Only 637,500 boats had registrations valid for 1986. Moreover, a survey of the owners of these boats (Talhelm, Jordan, and Holecek, 1988a) estimated that only 598,000 of these 637,500 validly registered boats were actually used for boating in 1986 (Table 15-3). That is, some 39,500 officially registered boats were completely inactive that year.

Most (72%) of the boats with registrations valid for 1986 were 16 feet long or smaller, 17% were 17 to 20 feet long, 8% were 21 to 26 feet long, and 3% were over 26 feet long (Table 15-3). Of the 598,000 boats actually used, 66% were outboard-powered, 19% were inboards and inboard/outboards, 7% were sailboats, and 8% were some other type of craft.

The number of boats registered in Michigan has grown fairly steadily at about 2.5% to 3% per year since boats were first registered in 1960 (Table 15-8; Figure 15-3). The level period portrayed in Figure 15-3 from 1977 to 1980 is attributable to a 1977 change from an annual to a three-year registration period, rather than to a smaller increase in boat numbers.

Statistics on the number of watercraft with registrations valid for 1989 in each county by boat size and type are presented in Tables 15-9 and 15-10. Boats are often registered in the boater's home county, rather than at the boating location.

Demand-Side Aspects of Boating in Michigan

This section summarizes selected results from the 1986 Michigan Recreational Boating Survey (Talhelm, Jordan, and Holecek, 1988a). The study involved a mail survey of the owners of 10,089 of the boats registered in Michigan for the 1986 boating season. About half of the boat owners contacted responded. The survey results pertain to recreational boating activity in Michigan waters only and do not account for boating by: (1) an unknown number of unregistered boats and boats with expired registrations, (2) an unknown number of boats used in Michigan but registered in other states or countries, and (3) unpowered craft under 17-feet long, which do not have to be registered. Similar surveys were conducted in Michigan about every three years from 1965 to 1980.

Characteristics of Boat Owners

The survey revealed that the owners of registered boats actually used in Michigan in 1986 had an average age of 49.9, an average of 13.5 years of education, a median family income of $36,400, and a household with an average of 2.9 persons, including an average of 0.4 children under 12 (Table 15-11). They had owned their present boat for an average of 8.2 years and had owned boats of some kind for an average of 17.1 years (Table 15-12). Compared to boat owners in 1980, these boat owners were somewhat older and had more years of education, higher incomes, smaller households, and fewer children under 12.

Owners of larger boats were more educated, were less likely to own a second home, had fewer young children, and had owned their present boat for a shorter time than owners of smaller boats (Table 15-12). Further information on the characteristics of boat owners, including an analysis of demographic life cycle segments, is available in Talhelm, et. al. (1988a).

Table 15-8. Trends in boat numbers and use, 1971-1986.

	1971	1974	1977	1980	1986	Percent Change 1974-1980	Percent Change 1980-1986
NUMBER OF BOATS (000s)							
Working registration	489	535	585	595	710	+ 11	+ 19
Valid registration	N.A.	N.A.	N.A.	N.A.	638	N.A.	N.A.
Active boats	N.A.	404	423	509	598	+ 26	+ 18
GREAT LAKES BOAT-DAYS (000s)							
Small boats	2,422	2,553	3,060	3,788	4,909	+ 48	+ 30
Large boats	952	1,094	1,730	1,563	2,614	+ 43	+ 67
Total	3,375	3,646	4,789	5,351	7,524	+ 47	+ 41
INLAND BOAT-DAYS (000s)							
Small boats	8,046	7,768	9,387	10,546	17,632	+ 36	+ 67
Large boats	312	430	981	1,028	1,429	+139	+ 39
Total	8,358	8,198	10,367	11,574	19,061[a]	+ 41	+ 65
TOTAL BOAT-DAYS (000s)	11,732	11,845	15,156	16,925	26,584[b]	+ 43	+ 57
BOAT-DAYS/ACTIVE BOAT	N.A.	26.3	32.5	33.3	44.4	+ 27	+ 33

NOTE: "Small boats" means boats 20'and under in length; "large boats" means boats over 20' in length. "Inland boat-days" means boat-days on inland lakes, rivers, and streams. Details may not add to totals due to rounding error.

[a] The 1986 estimate in constant units would be 17,400 (i.e., adjusted for survey differences).

[b] The 1986 estimate in constant units would be 25,000 (i.e., adjusted for survey differences).

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1988. 1986 Michigan Recreational Boating Survey. Travel, Tourism, and Recreation Resource Center, Michigan State University. East Lansing.

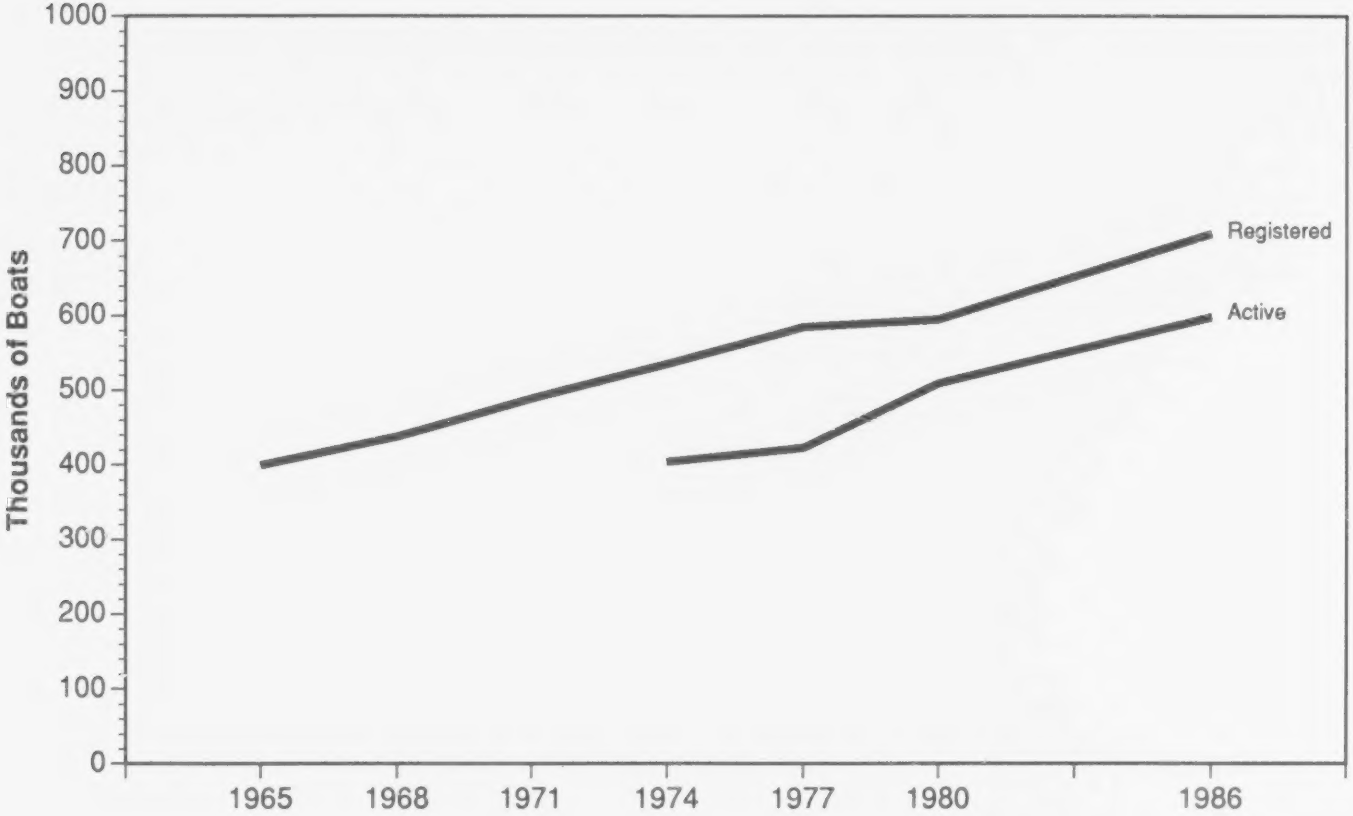


Figure 15-3. Trends in numbers of registered boats and active boats in Michigan, 1965-86.

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1988. *1986 Michigan Recreational Boating Survey*. Travel, Tourism, and Recreation Resource Center, Michigan State University. East Lansing.

Marina slips continue to be in short supply in Michigan.

Table 15-9. Number of registered watercraft by Michigan county by length of craft, December 1989.

	LENGTH OF CRAFT										
COUNTY	<12.0'	12.0'-15.9'	16.0'-20.0'	20.1'-28.0'	28.1'-35.0'	35.1'-42.0'	42.1'-50.0'	>50.0'	Total	Pleasure Craft	Commercial Craft
Alcona	89	1,160	581	182	12	1	0	0	2,025	1,887	11
Alger	93	1,142	306	75	10	5	4	4	1,639	1,560	14
Allegan	801	5,129	1,977	904	135	45	9	9	9,009	8,883	28
Alpena	331	2,786	963	356	35	17	8	1	4,497	4,302	61
Antrim	193	2,492	1,157	460	35	7	2	1	4,347	4,116	58
Arenac	62	997	1,736	287	28	8	2	1	3,121	1,786	20
Baraga	45	616	161	51	4	0	1	0	878	860	8
Barry	588	4,322	1,759	791	57	3	3	1	7,524	7,331	32
Bay	510	4,831	2,966	1,637	211	78	21	8	10,262	10,167	25
Benzie	136	1,901	984	226	39	6	1	0	3,293	2,679	49
Berrien	870	6,639	2,951	1,486	276	85	17	12	12,336	12,121	64
Branch	318	3,370	1,479	501	15	2	0	0	5,685	5,599	38
Calhoun	847	6,620	2,248	751	91	31	4	3	10,595	10,472	39
Cass	536	4,347	2,051	836	34	5	1	0	7,810	7,530	47
Charlevoix	251	1,849	1,080	554	99	33	8	4	3,878	3,704	52
Cheboygan	210	2,647	1,043	575	50	22	4	21	4,572	4,296	47
Chippewa	133	3,016	1,058	315	39	13	7	5	4,586	4,270	214
Clare	208	2,332	779	342	8	4	0	1	3,674	3,526	35
Clinton	317	3,069	1,329	446	48	6	0	0	5,215	5,141	12
Crawford	113	970	1,599	192	11	2	0	1	2,888	1,904	75
Delta	215	2,963	840	171	33	17	13	1	4,253	4,181	30
Dickinson	139	2,338	635	120	16	3	1	0	3,252	3,219	18
Eaton	465	4,559	1,882	639	73	27	1	0	7,646	7,516	26
Emmet	254	2,209	1,112	548	89	31	6	2	4,251	4,132	36
Genesee	1,947	16,257	8,510	3,851	514	104	26	5	31,214	30,920	61
Gladwin	163	2,003	997	431	22	2	0	0	3,618	3,535	6
Gogebic	81	1,898	431	100	17	4	0	1	2,532	2,387	47
Grand Traverse	609	5,644	2,940	1,418	191	53	15	2	10,872	10,579	64
Gratiot	201	1,910	659	190	10	3	1	0	2,974	2,959	5
Hillsdale	209	2,331	1,075	361	15	1	0	2	3,994	3,964	8
Houghton	106	1,714	645	228	43	15	0	1	2,752	2,682	31
Huron	109	1,504	958	527	41	14	1	0	3,154	2,998	44
Ingham	1,216	9,007	4,122	1,565	240	84	19	5	16,258	16,016	24
Ionia	283	2,874	923	313	22	7	0	0	4,422	4,353	23
Iosco	212	2,921	1,415	426	45	10	1	1	5,031	4,671	28
Iron	198	1,924	498	95	5	3	0	0	2,723	2,652	44
Isabella	250	2,120	839	265	26	6	2	0	3,508	3,422	5
Jackson	917	7,677	3,567	1,760	72	16	1	3	14,013	13,883	59
Kalamazoo	1,699	9,713	4,199	1,775	266	85	26	6	17,769	17,586	36
Kalkaska	155	1,384	511	198	9	4	1	1	2,263	2,230	20
Kent	3,751	20,386	9,774	4,282	809	293	66	23	39,384	38,989	119
Keweenaw	11	186	77	18	2	2	0	0	296	218	62
Lake	90	936	953	66	8	3	1	0	2,057	1,263	20
Lapeer	430	2,916	1,439	616	59	20	3	0	5,483	5,406	21

Leelanau	180	2,293	1,088	461	60	25	6	3	4,116	3,933	34
Lenawee	461	4,178	2,184	782	54	5	3	1	7,668	7,630	18
Livingston	887	5,543	3,577	1,951	149	34	8	5	12,154	11,723	56
Luce	89	1,005	188	65	3	0	0	3	1,353	1,274	9
Mackinac	85	1,935	612	268	22	8	6	14	2,950	2,796	92
Macomb	3,119	14,431	12,625	10,025	2,189	660	152	34	43,235	42,883	85
Manistee	134	2,019	689	227	48	7	3	2	3,129	2,976	46
Marquette	459	4,599	1,563	355	47	10	3	0	7,036	6,917	55
Mason	174	2,263	725	270	57	15	3	2	3,509	3,326	105
Mecosta	199	2,434	946	411	21	17	1	1	4,030	3,862	15
Menominee	147	1,684	528	157	17	4	7	3	2,547	2,497	11
Midland	497	4,509	2,241	790	114	34	10	3	8,198	8,051	29
Missaukee	80	989	486	139	3	2	0	0	1,699	1,504	4
Monroe	516	3,697	3,054	1,726	311	73	16	3	9,396	9,284	46
Montcalm	392	3,694	1,118	379	19	15	2	0	5,619	5,557	15
Montmorency	137	1,337	254	189	20	1	0	0	1,938	1,801	29
Muskegon	758	7,329	3,359	1,782	271	83	17	4	13,603	13,299	52
Newaygo	255	3,219	1,231	466	50	12	1	1	5,235	4,946	17
Oakland	5,733	26,683	22,572	11,200	2,116	843	219	39	69,405	68,272	252
Oceana	149	1,497	455	170	25	2	2	3	2,303	2,139	33
Ogemaw	157	1,698	807	263	10	1	1	0	2,937	2,724	33
Ontonagon	33	874	222	55	10	2	0	0	1,196	1,183	7
Osceola	124	1,364	443	103	8	1	0	0	2,043	1,861	21
Oscoda	94	810	778	67	5	2	0	0	1,756	1,174	16
Otsego	153	1,581	473	231	15	12	3	0	2,468	2,429	13
Ottawa	1,540	8,471	4,635	2,647	496	158	37	9	17,993	17,770	48
Presque Isle	113	1,622	418	234	17	4	2	0	2,410	2,337	48
Roscommon	223	2,997	1,423	917	31	3	3	1	5,598	5,089	205
Saginaw	767	8,942	4,642	1,927	236	63	22	2	16,601	16,526	19
Saint Clair	763	5,182	3,393	2,589	481	149	34	11	12,602	12,373	86
Saint Joseph	553	4,553	1,777	542	34	7	2	1	7,469	7,332	68
Sanilac	94	1,053	603	221	25	6	2	2	2,006	1,982	10
Schoolcraft	68	1,338	292	66	2	2	4	0	1,772	1,626	10
Shiawassee	317	3,160	1,288	448	43	14	2	2	5,274	5,223	5
Tuscola	209	2,336	1,365	587	40	13	1	0	4,551	4,515	8
Van Buren	590	4,115	1,534	740	68	28	7	4	7,086	6,953	47
Washtenaw	972	7,239	4,231	1,735	232	71	13	6	14,499	14,012	57
Wayne	4,711	29,880	23,170	11,836	2,530	850	222	82	73,281	72,801	218
Wexford	172	1,954	1,281	276	24	8	1	0	3,716	2,985	19
Foreign	1,772	13,870	8,280	4,477	1,044	489	149	64	30,145	29,948	96
Unknown County	760	495	593	426	96	33	10	1	2,414	1,722	8
Total	48,997	366,481	198,351	93,130	14,907	4,946	1,250	431	728,493	709,130	3,811

SOURCE: Michigan Department of State.

Table 15-10. Number of registered watercraft by Michigan county by type of craft, December 1989.

COUNTY	TYPE OF CRAFT Inboard	Outboard	Sail	Sail/ Auxiliary	Canoe	Pontoon	Other Power	Non-Power	Total	Pleasure Craft	Commercial Craft
Alcona	221	1,367	36	20	32	162	13	174	2,025	1,887	11
Alger	134	1,255	9	10	67	42	1	121	1,639	1,560	14
Allegan	1,281	6,356	229	144	112	679	38	170	9,009	8,883	28
Alpena	419	3,327	79	63	99	261	8	241	4,497	4,302	61
Antrim	642	2,685	331	48	75	281	10	275	4,347	4,116	58
Arenac	355	1,210	27	22	29	116	3	1,359	3,121	1,786	20
Baraga	91	679	3	3	38	15	2	47	878	860	8
Barry	815	4,874	292	53	94	1,044	42	310	7,524	7,331	32
Bay	2,643	6,242	210	204	214	477	28	244	10,262	10,167	25
Benzie	277	1,776	337	28	51	150	8	666	3,293	2,679	49
Berrien	2,340	8,321	437	213	133	564	71	257	12,336	12,121	64
Branch	670	3,962	130	19	55	714	17	118	5,685	5,599	38
Calhoun	1,068	7,722	346	107	191	676	69	416	10,595	10,472	39
Cass	902	5,043	348	37	72	1,163	37	208	7,810	7,530	47
Charlevoix	801	2,148	345	159	55	175	11	184	3,878	3,704	52
Cheboygan	789	2,916	177	42	58	291	10	289	4,572	4,296	47
Chippewa	530	3,655	63	45	78	107	8	100	4,586	4,270	214
Clare	241	2,509	34	26	52	542	12	258	3,674	3,526	35
Clinton	573	3,631	160	57	185	397	32	180	5,215	5,141	12
Crawford	134	1,005	45	15	116	119	9	1,445	2,888	1,904	75
Delta	325	3,474	47	53	95	71	14	174	4,253	4,181	30
Dickinson	133	2,531	23	8	148	158	14	237	3,252	3,219	18
Eaton	879	5,281	283	108	232	588	34	241	7,646	7,516	26
Emmet	740	2,436	465	143	90	223	13	141	4,251	4,132	36
Genesee	6,018	19,619	1,015	451	828	2,437	113	733	31,214	30,920	61
Gladwin	365	2,252	37	13	46	728	4	173	3,618	3,535	6
Gogebic	117	2,112	10	4	65	73	14	137	2,532	2,387	47
Grand Traverse	1,834	6,404	790	347	164	653	30	650	10,872	10,579	64
Gratiot	264	2,251	76	6	80	213	6	78	2,974	2,959	5
Hillsdale	453	2,671	103	11	49	609	14	84	3,994	3,964	8
Houghton	419	1,990	47	41	90	46	13	106	2,752	2,682	31
Huron	706	2,026	49	50	36	145	18	124	3,154	2,998	44
Ingham	2,261	10,253	1,142	367	415	1,219	77	524	16,258	16,016	24
Ionia	329	3,270	62	38	106	391	40	186	4,422	4,353	23
Iosco	569	3,342	133	45	100	345	12	485	5,031	4,671	28
Iron	78	1,959	14	4	120	115	16	417	2,723	2,652	44
Isabella	354	2,436	112	56	66	304	12	168	3,508	3,422	5
Jackson	1,713	8,650	726	85	251	2,158	87	343	14,013	13,883	59
Kalamazoo	2,595	11,363	1,207	372	263	1,462	72	435	17,769	17,586	36
Kalkaska	256	1,552	49	18	37	160	12	179	2,263	2,230	20
Kent	8,286	23,769	1,887	956	601	2,694	272	919	39,384	38,989	119
Keweenaw	30	214	3	3	16	4	0	26	296	218	62
Lake	71	970	14	6	24	81	17	874	2,057	1,263	20
Lapeer	927	3,678	109	57	139	384	20	169	5,483	5,406	21

Leelanau	616	2,358	517	147	51	195	11	221	4,116	3,933	34
Lenawee	1,096	4,786	358	50	150	1,064	34	130	7,668	7,630	18
Livingston	2,517	6,530	574	146	242	1,607	36	502	12,154	11,723	56
Luce	35	1,050	15	5	48	91	2	107	1,353	1,274	9
Mackinac	371	2,202	111	39	44	122	2	59	2,950	2,796	92
Macomb	16,741	21,815	1,017	1,099	443	1,335	155	630	43,235	42,883	85
Manistee	355	2,303	129	49	42	86	4	161	3,129	2,976	46
Marquette	501	4,911	105	101	414	229	78	697	7,036	6,917	55
Mason	416	2,585	105	60	46	167	7	123	3,509	3,326	105
Mecosta	276	2,686	70	28	52	694	17	207	4,030	3,862	15
Menominee	198	2,034	28	31	50	57	14	135	2,547	2,497	11
Midland	1,279	5,037	514	210	264	564	28	302	8,198	8,051	29
Missaukee	130	1,117	26	10	30	168	2	216	1,699	1,504	4
Monroe	2,929	5,358	159	230	161	316	38	205	9,396	9,284	46
Montcalm	372	4,133	109	39	83	667	53	163	5,619	5,557	15
Montmorency	91	1,447	22	7	36	222	7	106	1,938	1,801	29
Muskegon	2,840	8,975	419	399	146	433	61	330	13,603	13,299	52
Newaygo	469	3,644	80	35	80	582	26	319	5,235	4,946	17
Oakland	20,975	32,102	4,908	2,240	1,002	5,757	324	2,097	69,405	68,272	252
Oceana	211	1,536	225	56	34	74	6	161	2,303	2,139	33
Ogemaw	221	1,927	48	11	33	343	5	349	2,937	2,724	33
Ontonagon	72	1,004	6	7	48	22	2	35	1,196	1,183	7
Osceola	136	1,484	17	12	46	123	11	214	2,043	1,861	21
Oscoda	57	886	4	5	44	84	0	676	1,756	1,174	16
Otsego	267	1,747	91	29	62	183	9	80	2,468	2,429	13
Ottawa	4,869	10,743	730	529	197	499	122	304	17,993	17,770	48
Presque Isle	203	1,837	52	11	47	192	5	63	2,410	2,337	48
Roscommon	464	3,347	168	29	77	1,069	7	437	5,598	5,089	205
Saginaw	3,120	10,904	418	231	578	901	64	385	16,601	16,526	19
Saint Clair	4,318	7,297	192	275	132	148	38	202	12,602	12,373	86
Saint Joseph	671	5,305	232	27	96	891	25	222	7,469	7,332	68
Sanilac	433	1,380	43	53	23	27	3	44	2,006	1,982	10
Schoolcraft	76	1,410	7	7	45	98	2	127	1,772	1,626	10
Shiawassee	633	3,775	112	51	189	307	14	193	5,274	5,223	5
Tuscola	843	3,120	57	46	121	218	19	127	4,551	4,515	8
Van Buren	810	4,927	176	96	77	773	63	164	7,086	6,953	47
Washtenaw	2,430	7,720	1,549	378	321	1,148	66	887	14,499	14,012	57
Wayne	21,124	41,603	2,444	2,330	988	3,273	232	1,287	73,281	72,801	218
Wexford	346	2,196	80	30	40	266	7	751	3,716	2,985	19
Foreign	6,824	15,722	2,412	935	166	3,607	83	396	30,145	29,948	96
Unknown County	718	651	102	88	17	129	10	699	2,414	1,722	8
Total	145,701	440,780	30,472	14,718	12,632	51,967	3,045	29,178	728,493	709,130	3,811

SOURCE: Michigan Department of State.

Table 15-11. Demographic and socioeconomic characteristics of Michigan boat owners, 1980 and 1986.

	PERCENT OF TOTAL		CUMULATIVE PCT.		MEDIAN/MEAN	
	1980	1986	1986		1980	1986
AGE						
20 or less	2.0	1.5	1.5			
21-30	9.5	6.2	7.7			
31-40	19.5	20.4	28.1	Median	49.7	50.3
41-50	21.6	21.2	49.3	Mean	48.9	49.9
51-60	23.0	25.1	74.4			
61-70	17.9	18.8	93.2			
71+	6.4	6.8	100.0			
YRS. OF EDUCATION						
1-11	19.6	11.8	11.8			
12	37.1	37.2	49.0	Median	12.3	13.1
13-16	31.7	37.5	86.5	Mean	13.0	13.5
17+	11.6	13.5	100.0			
INCOME						
Under $20,000	41.0	21.0	21.0			
$20,000-$29,999	29.3	17.2	37.2	Median	$22,556	$36,400
$30,000-$39,999	15.1	20.0	57.2			
$40,000+	14.6	42.8	100.0			
$40,000-$49,999		15.0	72.2			
$50,000-$59,999		11.3	83.5			
$60,000-$69,999		6.1	89.5			
$70,000-$79,999		4.1	93.6			
$80,000-$99,999		2.6	96.2			
$100,000+		3.8	100.0			
HOUSEHOLD SIZE						
1	10.1	8.7	8.7			
2	36.9	40.5	49.1			
3	17.4	17.6	66.7	Median	3.2	3.1
4	20.3	21.1	87.8	Mean	3.0	2.9
5	9.8	8.0	95.8			
6	3.6	3.3	99.1			
7	1.4	0.4	99.5			
8+	0.5	0.5	100.0			
NO. CHILDREN UNDER 12						
0	73.5	78.9	78.9			
1	12.2	8.3	87.2			
2	10.2	9.8	97.0	Median	0.6	0.6
3	3.5	2.3	99.3	Mean	0.5	0.4
4	0.5	0.5	99.8			
5+	0.1	0.2	100.0			

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1988. 1986 Michigan Recreational Boating Survey. Travel, Tourism, and Recreation Resource Center, Michigan State University. East Lansing.

Table 15-12. Demographic and socioeconomic characteristics of boat owners by boat type, 1986.

Boat Type	Avg. Age of Owner	Average Yrs. of Education	Average No. Persons in Household	Avg. No. Children < 12	Avg. Yrs. Owned This Boat	Average Yrs. of Boat Ownership	Pct. That Owned Second Home
SIZE							
16' or less	50.7	13.3	2.9	0.38	9.3	17.8	31
17'-20'	47.0	13.9	3.0	0.41	6.1	15.8	30
21'-26'	48.0	14.0	2.9	0.38	4.8	15.4	29
27'+	48.3	15.0	2.9	0.30	4.7	16.8	19
PROPULSION							
Inboard or I/O	47.0	14.2	3.0	0.37	5.0	15.6	34
Outboard	51.0	13.2	2.9	0.38	9.2	18.1	30
Sail	46.7	15.6	2.8	0.40	6.2	13.8	29
Row	51.0	13.0	2.9	0.41	11.1	15.9	24
Canoe	43.7	13.5	3.3	0.48	8.6	18.3	28
Other	47.2	13.6	3.4	0.59	4.8	9.9	34
OVERALL AVERAGE	49.9	13.5	2.9	0.38	8.2	17.1	30

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1988. 1986 Michigan Recreational Boating Survey. Travel, Tourism, and Recreation Resource Center, Michigan State University. East Lansing.

Patterns and Trends in Boating Activity

On the basis of boat-days per boat, inboard and inboard/outboard boats, and "other" (mostly pontoon) boats were used more often than other craft; and rowboats, canoes, and sailboats were used less often (Table 15-13). About 61% of all boating occurred on inland lakes, 28% occurred on the Great Lakes, and 11% occurred on inland rivers and streams (Table 15-14). Most types of boats were used most frequently on inland lakes (Table 15-13). Inboard boats, inboard/outboard craft, and sailboats were used slightly more on the Great Lakes than on inland lakes, and canoes were used slightly more on rivers and streams than on inland lakes.

Boating in Michigan is closely associated with fishing. Over half (52%) of all boat-days involved fishing (Table 15-3), including 56% of Great Lakes boat-days and 51% of inland boat-days (Table 15-15). Cruising/pleasure boating accounted for 36% of all boat-days, waterskiing 10%, and other activities 1% (Table 15-3).

The above patterns of boating activity with respect to craft type, water bodies used, and ancillary activities have remained fairly consistent over the last 15 years (Figures 15-4, 15-5, and 15-6). All uses have increased together. Boating activity in general increased at least 48% between 1980 and 1986. During the same period, large boat use on the Great Lakes increased at more than twice the rate of small boat use on the Great Lakes, and small boat use on inland waters increased at nearly twice the rate of large boat use on inland waters (Table 15-8). This could have resulted in part from lower relative fuel prices in 1986. The percentage of boat-days on which ancillary recreation activities (e.g., fishing) took place remained relatively constant between 1980 and 1986 on both the Great Lakes and inland waters (Table 15-15).

Transportation and Launching of Boats

The dominant mode of boat use was keeping the boat at one's permanent residence--at a non-waterfront location--and transporting it to an access site for boating. Some 40% of boats were used this way (Table 15-16). The other most common modes of boat use involved keeping one's boat at a cottage or second home on an inland lake (18%) or at a permanent residence on an inland lake (14%). All types of boats followed this general pattern, although a quarter or more of inboard, inboard/outboard, and sail boats were kept at marinas and yacht clubs (Table 15-17).

Michigan's launch sites received 5.9 million visits in 1986, or nearly 10 visits per active boat (Table 15-3). The use of public launch sites predominated, with visitation roughly split between Great Lakes and inland lakes. Many marinas and other firms also provide boat launching facilities on a commercial basis (Table 15-7).

Boating Origin/Destination Patterns

Boating activity is determined both by the availability of boating resources and by proximity to population centers. In 1986, the more populated counties and those with more boating resources close to population centers received the most boating activity (Table 15-18; Figures 15-7 through 15-10). The southern half of Lower Michigan received about 58% of boat-days, the northern half of Lower Michigan about 33%, and the Upper Peninsula about 9%.

About 21% of all Michigan boat-days took place in the 7-county Planning Region 1 of southeastern Michigan (Figure 15-11). Residents of that region generated about 30% of the

Table 15-13. Number of boats and boat-days by type of craft and water body used, 1986.

	GREAT LAKES			INLAND LAKES			RIVERS/STREAMS			ALL LOCATIONS[1]		
PROPULSION	Days 000s	Boats 000s	D/B	Days 000s	Boats 000s	D/B	Days 000s	Boats 000s	D/B	Days 000s	Boats 000s	D/B
Inboard or Inbd/Outbd	2,925	71	41	2,649	59	44	494	25	20	6,068	112	54
Outboard	3,785	150	25	11,710	308	38	1,756	87	20	17,251	397	43
Sail with or w/o power	668	19	35	619	22	28	65	2	32	1,353	39	35
Row	25	2	12	646	21	31	101	6	17	772	27	29
Canoe	14	2	7	243	10	24	299	12	25	556	17	33
Other	38	1	38	184	4	46	26	1	26	248	5	50
Unknown	69		6	249		12	20		4	335	---	---
Total	7,524	245	29	16,300	425	36	2,761	133	20	26,585	598	44

NOTE: "D/B" means boat-days per boat.

[1] Boat-days sum horizontally, but boats do not; the same boat can be used on more than one type of water body.

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1988. 1986 Michigan Recreational Boating Survey. Travel, Tourism, and Recreation Resource Center, Michigan State University. East Lansing.

Table 15-14. Michigan recreational boating use by size class and location, 1986.

	Great Lakes	Inland Lakes	Rivers and Streams	Total
SMALL BOATS				
Boat-days (000s)	4,909	15,245	2,387	22,541
Row percent	22	68	11	100
Column percent	65	94	86	85
Percent of total	18	57	9	85
LARGE BOATS				
Boat-days (000s)	2,614	1,055	374	4,043
Row percent	65	26	9	100
Column percent	35	6	14	15
Percent of total	10	4	1	15
TOTAL				
Boat-days (000s)	7,524	16,300	2,761	26,584
Row percent	28	61	11	100
Column percent	100	100	100	100

NOTE: "Small boats" means boats 20'and under in length; "large boats" means boats over 20' in length. Details may not add to totals due to rounding error.

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1988. 1986 Michigan Recreational Boating Survey. Travel, Tourism, and Recreation Resource Center, Michigan State University. East Lansing.

Table 15-15. Trends in the distribution of boat-days across ancillary recreation activities, 1968-86.

	GREAT LAKES			INLAND LAKES/RIVERS/STREAMS		
ACTIVITY	1968	1980	1986	1968	1980	1986
	------------------Percent of Boat-Days------------------					
Fishing	44	57	56	52	49	51
Cruising/ Pleasure Boating	40	35	38	25	35	35
Waterskiing	8	5	4	18	13	13
Other	8	3	1	5	3	1
Total	100	100	100	100	100	100

NOTE: Details may not add to totals due to rounding error.

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1988. 1986 Michigan Recreational Boating Survey. Travel, Tourism, and Recreation Resource Center, Michigan State University. East Lansing.

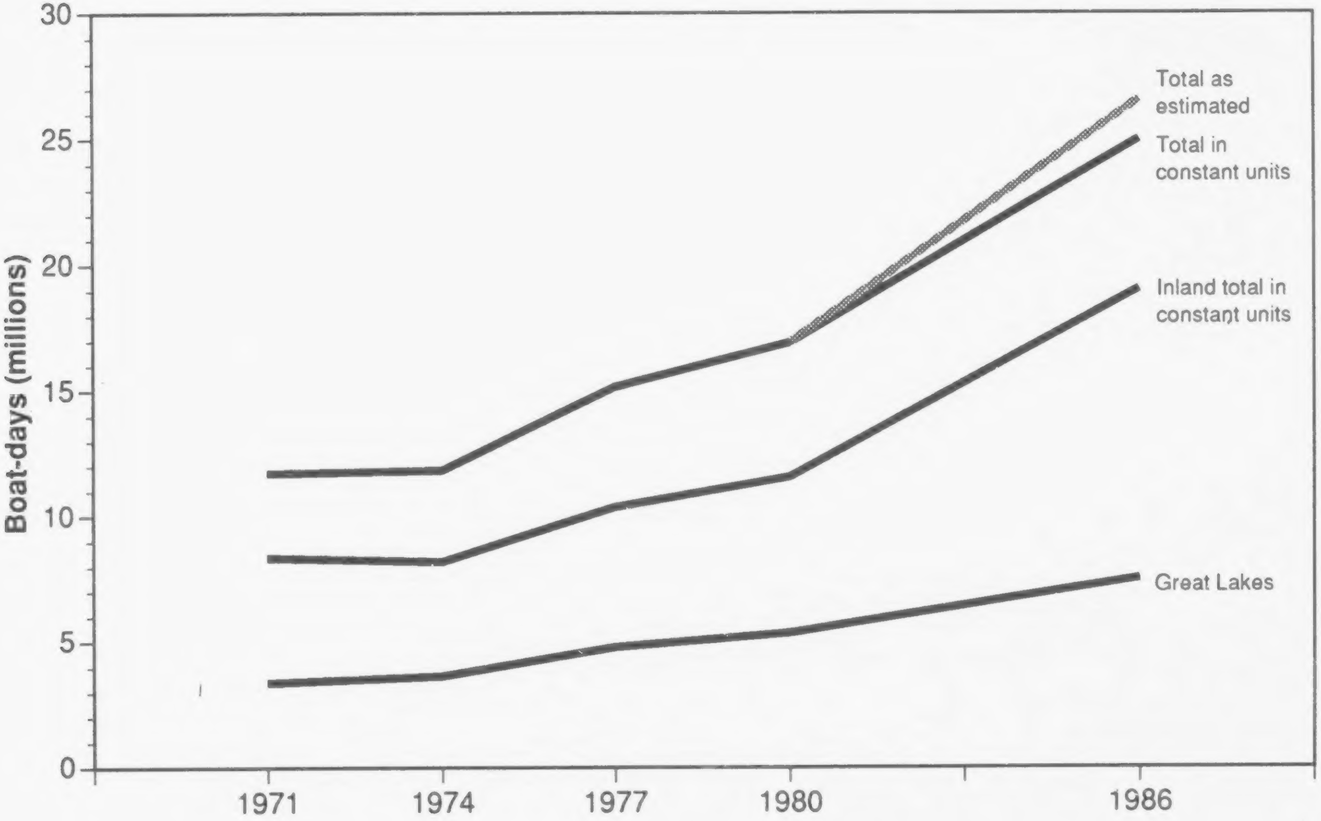


Figure 15-4. Estimated boat-days in Michigan, 1971-86.

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1988. *1986 Michigan Recreational Boating Survey*. Travel Tourism, and Recreation Resource Center, Michigan State University. East Lansing.

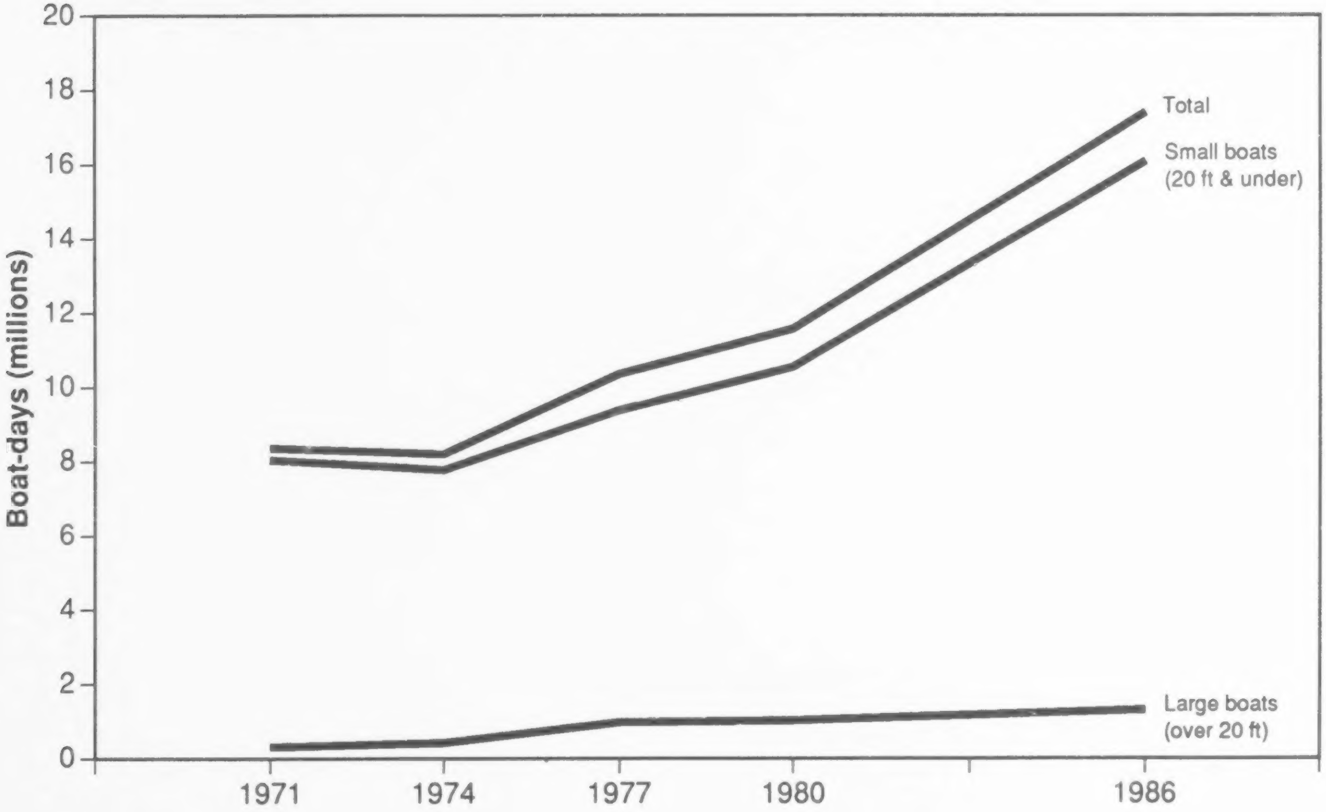


Figure 15-5. Estimated boat-days (in constant units) on Michigan's inland waters, 1971-86.

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1988. *1986 Michigan Recreational Boating Survey*. Travel, Tourism, and Recreation Resource Center, Michigan State University. East Lansing.

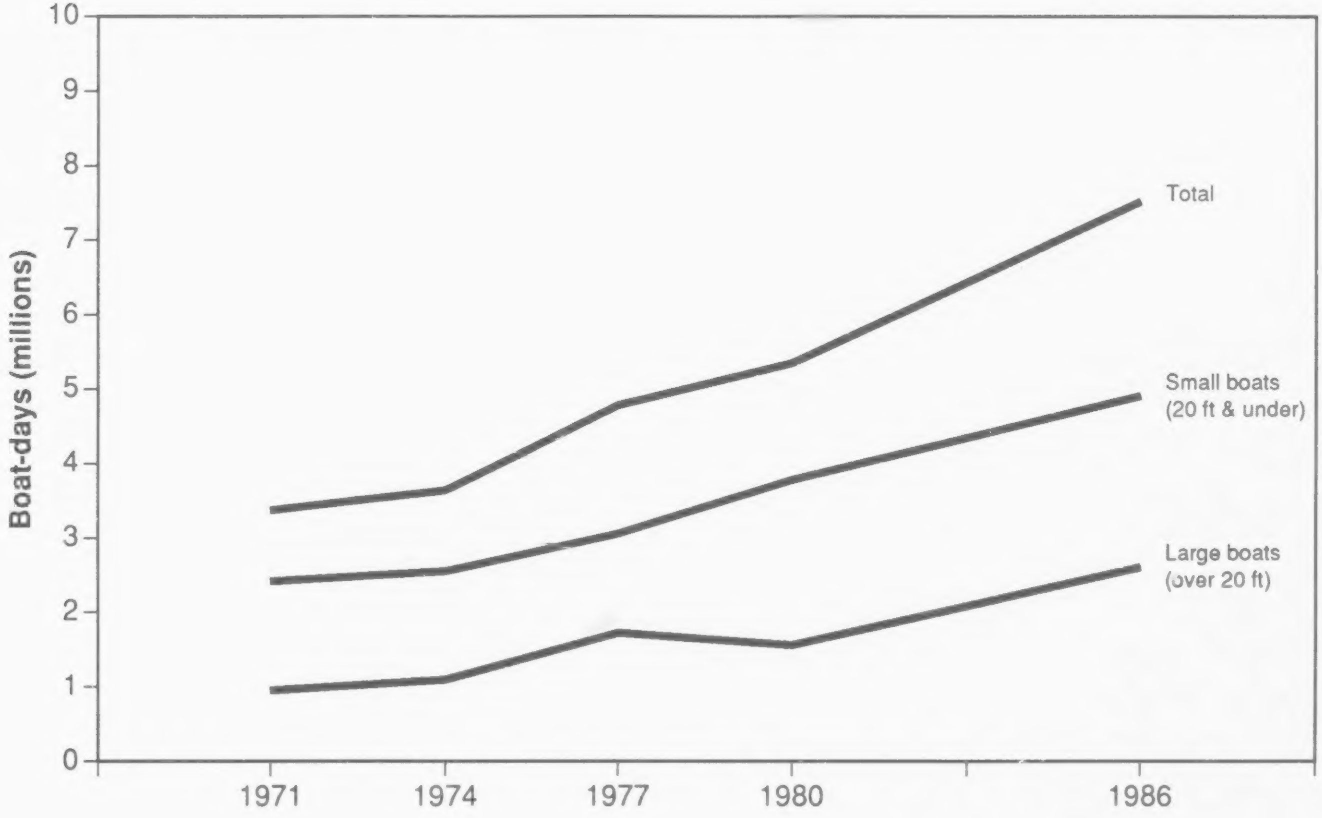


Figure 15-6. Estimated boat-days on the Great Lakes in Michigan, 1971-86.

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1988. *1986 Michigan Recreational Boating Survey*. Travel, Tourism, and Recreation Resource Center, Michigan State University. East Lansing

Table 15-16. Boat storage locations during boating season, 1986.

Facility	Great Lakes Access	Inland Lake Waterfront	River/Stream Waterfront	Non-Waterfront Site	Total
	Percent of All Boats				
Permanent residence	5	14	2	40	62
Summer cottage/ second home	3	18	1	2	23
Commercial marina	4	1	1	0	6
Public marina	2	0	0	0	2
Boat/yacht club	1	0	0	0	1
Other location	1	2	1	2	5
Total	16	36	4	43	100

NOTE: Details may not add to totals due to rounding error.

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1988. 1986 Michigan Recreational Boating Survey. Travel, Tourism, and Recreation Resource Center, Michigan State University. East Lansing.

Table 15-17. Boat storage locations during boating season by type of boat, 1986.

Facility	Inboard or I/O	Out-board	Sail	Row	Canoe	Other	Total
PERMANENT RESIDENCE							
Row percent	15	72	4	5	3	1	100
Column percent	49	67	40	71	68	63	62
SUMMER COTTAGE/ SECOND HOME							
Row percent	16	69	7	5	2	1	100
Column percent	20	24	25	23	13	27	23
COMMERCIAL MARINA							
Row percent	55	26	17	1	1	1	100
Column percent	18	2	15	1	2	5	6
PUBLIC MARINA							
Row percent	41	43	16	0	0	0	100
Column percent	5	2	6	0	0	0	2
BOAT/YACHT CLUB							
Row percent	45	13	41	0	0	0	100
Column percent	3	0	9	0	0	0	1
OTHER LOCATION							
Row percent	18	62	6	4	10	1	100
Column percent	5	5	5	5	17	4	5
TOTAL							
Row percent	19	66	7	5	3	1	100
Column percent	100	100	100	100	100	100	100
No. active boats (000s)	111	388	38	26	16	4	598[a]

NOTE: Details may not add to totals due to rounding error.

[a] Includes 16,000 boats of unknown type.

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1988. 1986 Michigan Recreational Boating Survey. Travel, Tourism, and Recreation Resource Center, Michigan State University. East Lansing.

Table 15-18. Estimated number of recreational boat-days that took place in each of Michigan's counties in 1986.

COUNTY	NUMBER OF RECREATIONAL BOAT-DAYS IN THOUSANDS On Great Lakes	On Inland Lakes	On Rivers and Streams	Total
Alcona	34	140	11	185
Alger	59	65	22	146
Allegan	104	240	39	383
Alpena	49	71	17	137
Antrim	50	244	38	332
Arenac	158	2	21	181
Baraga	74	6	0	80
Barry	0	675	10	685
Bay	231	3	47	281
Benzie	149	182	35	366
Berrien	157	152	131	440
Branch	0	287	17	304
Calhoun	0	234	0	234
Cass	0	437	1	438
Charlevoix	151	151	26	328
Cheboygan	102	365	121	588
Chippewa	286	80	50	416
Clare	0	309	3	312
Clinton	0	10	15	25
Crawford	0	165	71	236
Delta	164	41	9	214
Dickinson	0	102	9	111
Eaton	0	33	1	34
Emmet	81	136	44	261
Genesee	0	352	1	353
Gladwin	0	411	124	535
Gogebic	21	78	14	113
Grand Traverse	194	322	5	521
Gratiot	0	60	20	80
Hillsdale	0	226	0	226
Houghton	64	54	9	127
Huron	292	26	32	350
Ingham	0	32	13	45
Ionia	0	35	0	35
Iosco	244	271	111	626
Iron	0	73	2	75
Isabella	0	22	5	27
Jackson	0	495	5	500
Kalamazoo	0	466	5	471
Kalkaska	0	327	15	342
Kent	0	367	114	481
Keweenaw	21	28	0	49
Lake	0	153	22	175

Lapeer	0	104	13	117
Leelanau	114	154	1	269
Lenawee	0	406	32	438
Livingston	0	513	133	646
Luce	13	64	5	82
Mackinac	169	134	7	310
Macomb	910	21	78	1,009
Manistee	100	39	42	181
Marquette	116	174	10	300
Mason	132	169	8	309
Mecosta	0	280	41	321
Menominee	48	24	20	92
Midland	0	96	18	114
Missaukee	0	50	0	50
Monroe	515	1	10	526
Montcalm	0	635	0	635
Montmorency	0	115	2	117
Muskegon	267	234	28	529
Newaygo	0	344	101	445
Oakland	0	1,401	5	1,406
Oceana	55	111	3	169
Ogemaw	0	275	5	280
Ontonagon	12	10	4	26
Osceola	0	39	4	43
Oscoda	0	107	8	115
Otsego	0	141	0	141
Ottawa	511	174	144	829
Presque Isle	61	185	0	246
Roscommon	0	667	21	688
Saginaw	0	3	67	70
Saint Clair	809	79	187	1,075
Saint Joseph	0	258	51	309
Sanilac	84	0	0	84
Schoolcraft	33	68	24	125
Shiawassee	0	32	6	38
Tuscola	11	14	38	63
Van Buren	106	325	36	467
Washtenaw	0	571	147	718
Wayne	755	100	165	1,020
Wexford	0	109	49	158
Missing	18	144	14	176
Total	7,524	16,300	2,761	26,585

NOTE: Details may not add to totals due to rounding error. Figures are not comparable to those in Table 14-7 of the first edition of this book due to changes in questionnaire design.

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1988. 1986 Michigan Recreational Boating Survey. Travel, Tourism, and Recreation Resource Center, Michigan State University. East Lansing.

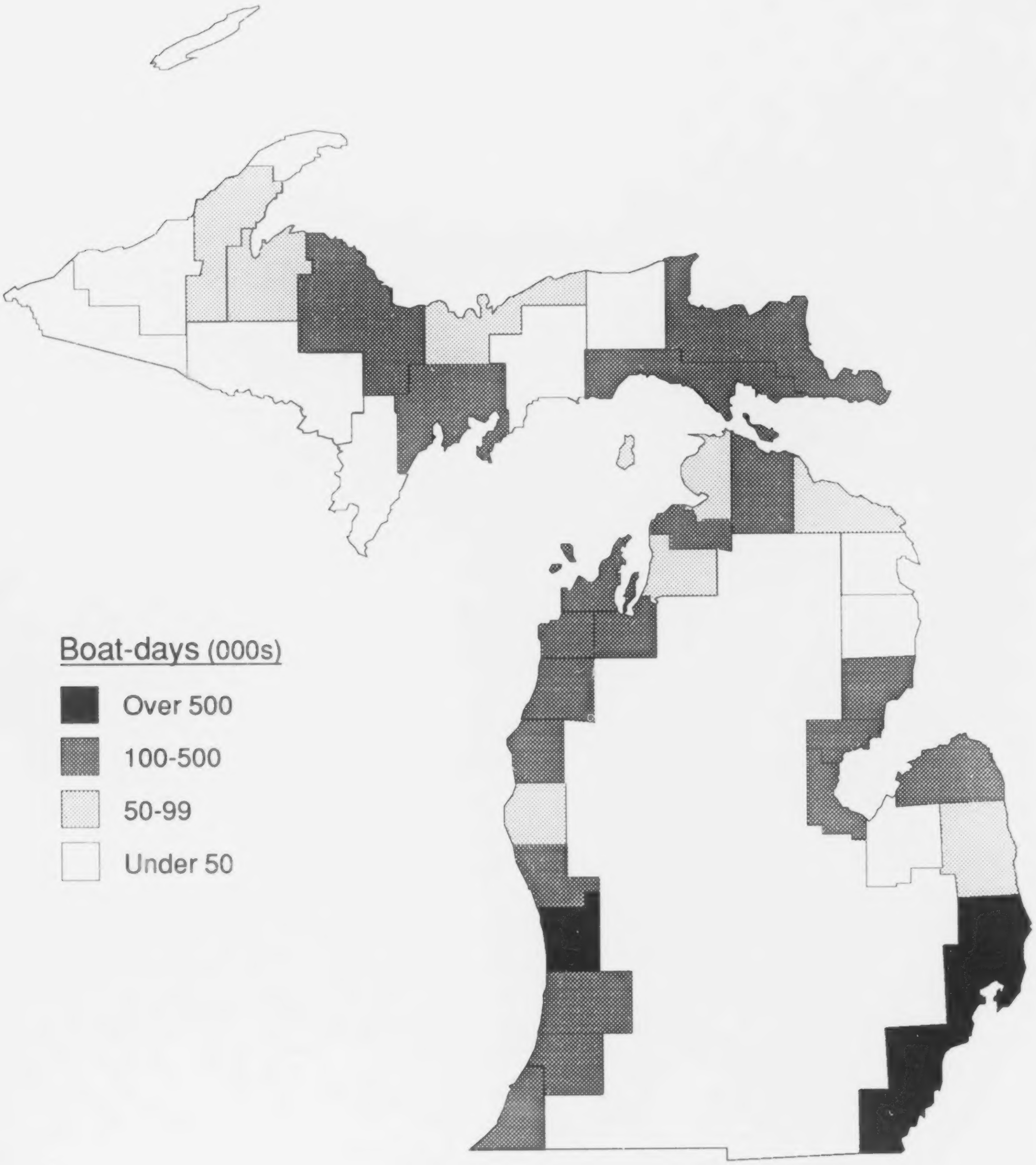

Boat-days (000s)
Over 500
100-500
50-99
Under 50

Figure 15-7. Great Lakes boat-days in Michigan by destination county, 1986.

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1988. *1986 Recrearional Boating Survey.* Travel, Tourism, and Recreation Resource Center, Michigan State University. East Lansing.

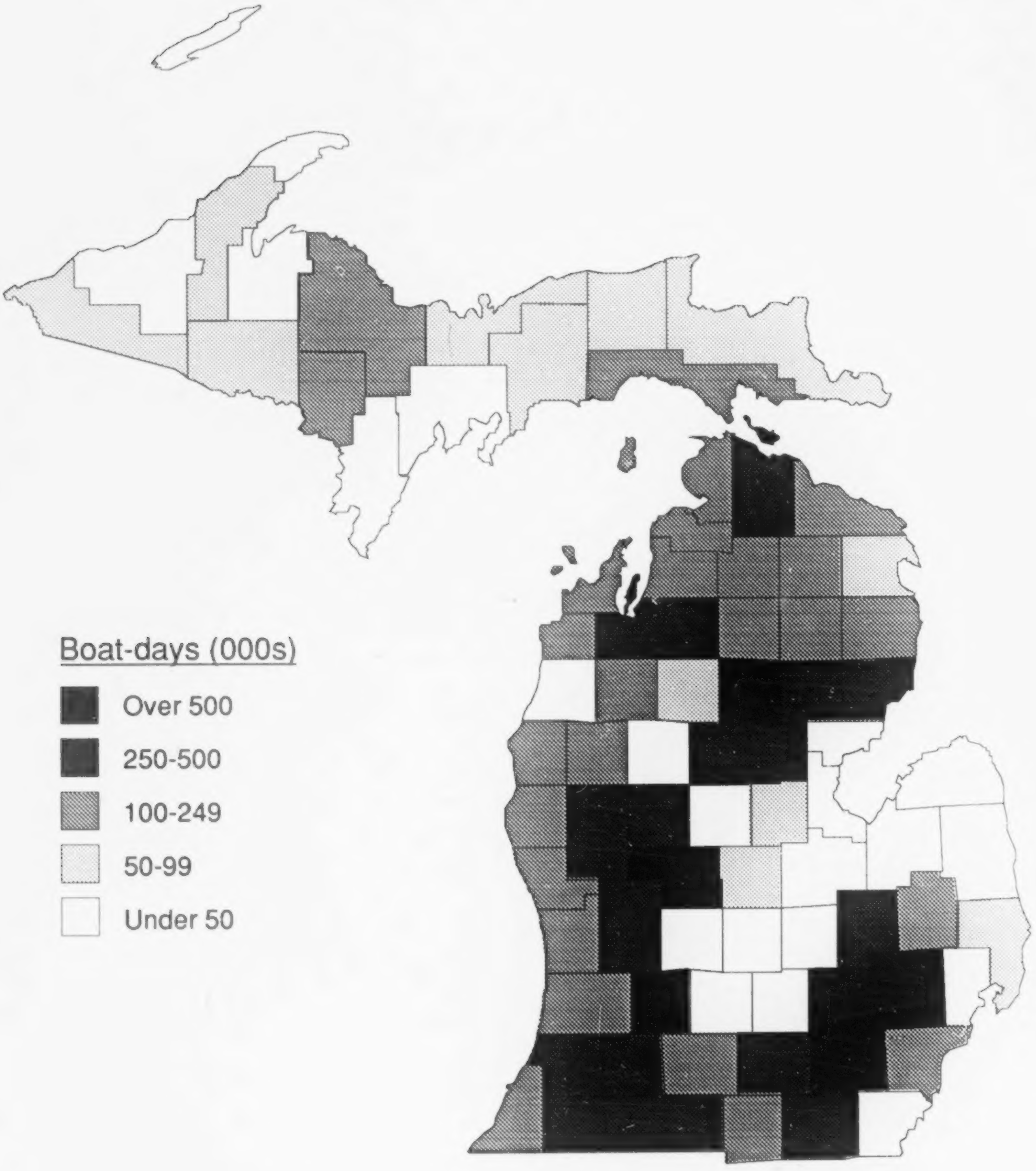

Boat-days (000s)
Over 500
250-500
100-249
50-99
Under 50

Figure 15-8. Inland lake boat-days in Michigan by destination county, 1986.

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1988. *1986 Recrearional Boating Survey.* Travel, Tourism, and Recreation Resource Center, Michigan State University. East Lansing.

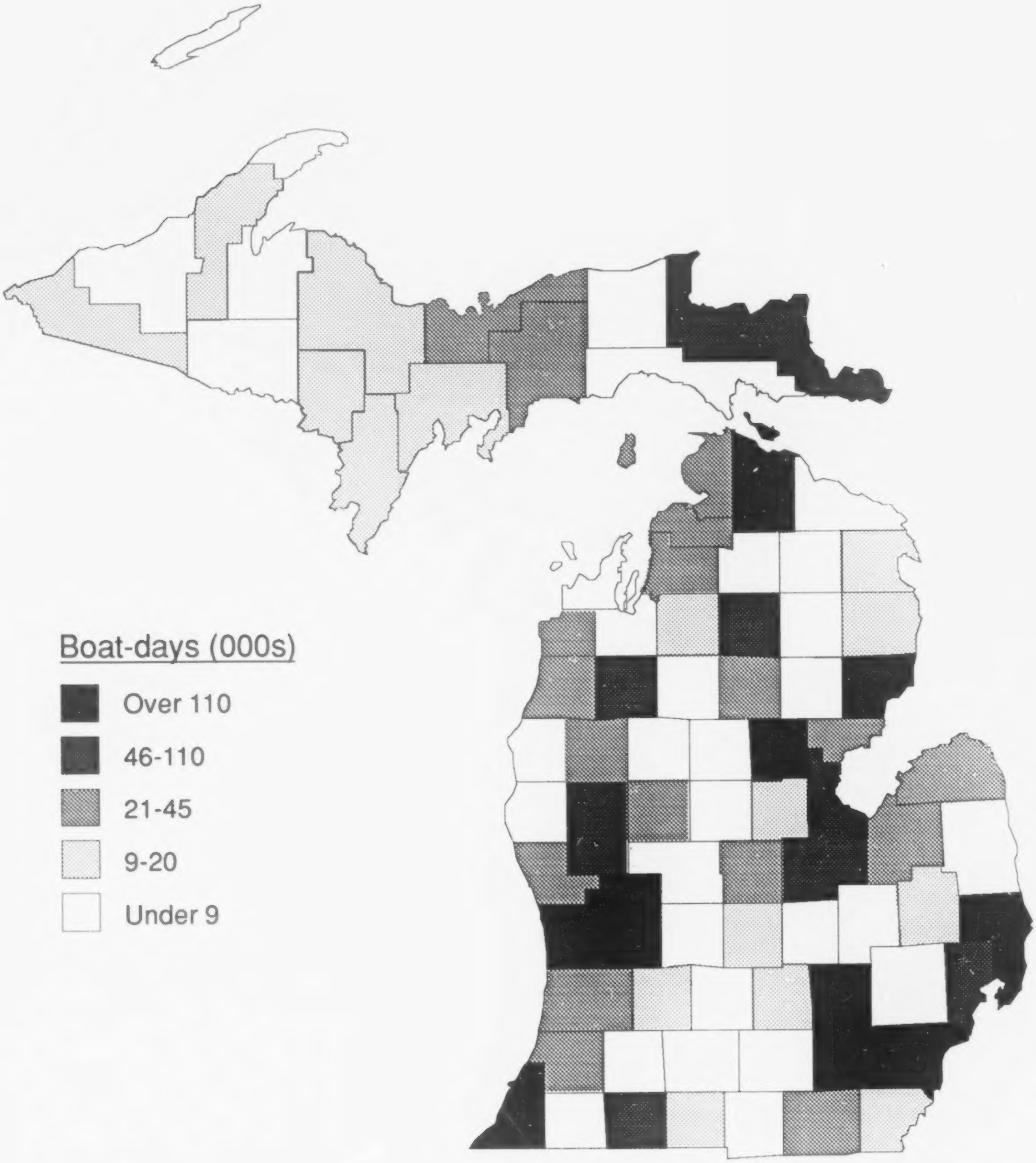

Boat-days (000s)
Over 110
46-110
21-45
9-20
Under 9

Figure 15-9. River / stream boat-days in Michigan by destination county, 1986.

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1988. *1986 Recrearional Boating Survey.* Travel, Tourism, and Recreation Resource Center, Michigan State University. East Lansing.

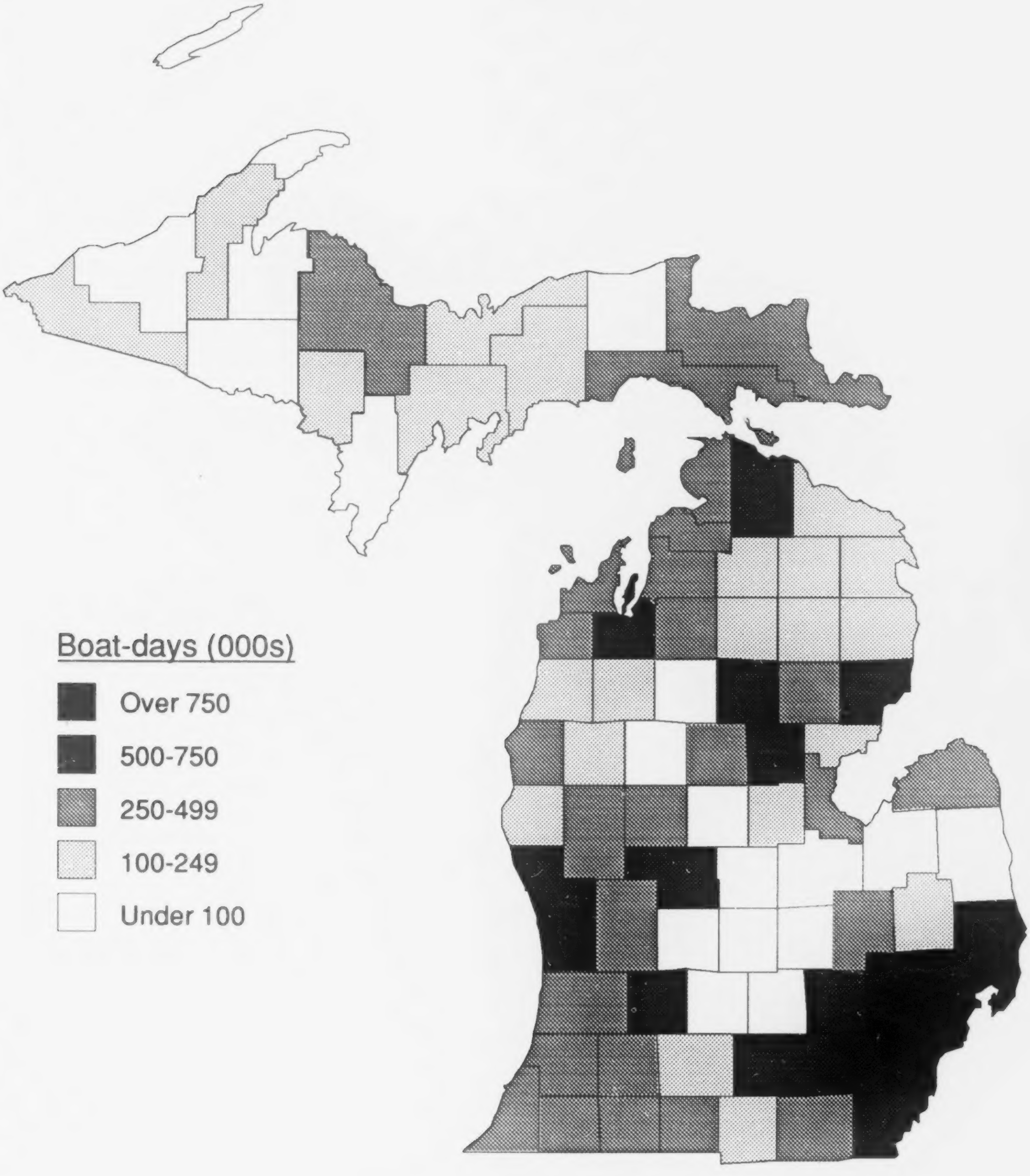

Boat-days (000s)
Over 750
500-750
250-499
100-249
Under 100

Figure 15-10. Total boat-days in Michigan by destination county, 1986.

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1988. *1986 Recrearional Boating Survey.* Travel, Tourism, and Recreation Resource Center, Michigan State University. East Lansing.

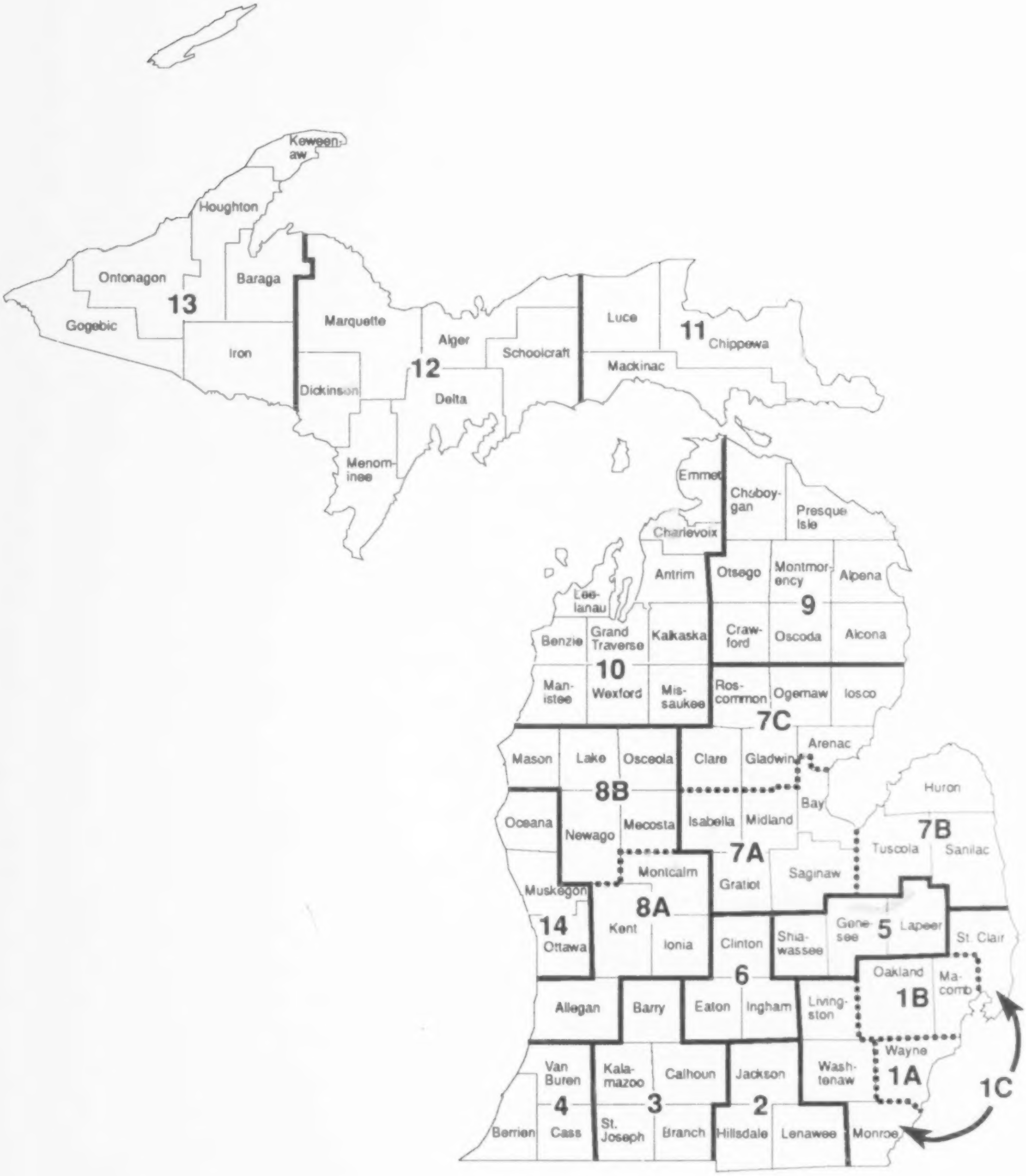

Keweenaw
Houghton
Ontonagon
Baraga
13
Gogebic
Iron
Marquette
Dickinson
Alger
12
Delta
Menominee
Schoolcraft
Luce
11
Chippewa
Mackinac
Emmet
Cheboygan
Presque Isle
Charlevoix
Antrim
Otsego
Montmorency
Alpena
9
Leelanau
Benzie
Grand Traverse
Kalkaska
Crawford
Oscoda
Alcona
10
Manistee
Wexford
Missaukee
Roscommon
Ogemaw
Iosco
7C
Arenac
Mason
Lake
Osceola
Clare
Gladwin
8B
Bay
Huron
Oceana
Newago
Mecosta
Isabella
Midland
7B
7A
Tuscola
Sanilac
Montcalm
Saginaw
Muskegon
Gratiot
8A
14
Kent
Ionia
Clinton
Shiawassee
Genesee
5
Lapeer
St. Clair
Ottawa
Oakland
Macomb
6
1B
Allegan
Barry
Eaton
Ingham
Livingston
Wayne
Van Buren
Kalamazoo
Calhoun
Jackson
Washtenaw
1A
1C
4
3
2
Berrien
Cass
St. Joseph
Branch
Hillsdale
Lenawee
Monroe

Figure 15-11. State Planning and Development Regions in Michigan.

state's boat-days. Only Wayne, Oakland, and Macomb Counties (Sub-Regions 1A and 1B) in Region 1 actually generated more boat-days than they received. The other four counties in Region 1 (Livingston, Monroe, St. Clair, and Washtenaw) received 11% of Michigan's boat-days, but generated only 9%.

All state planning regions dominated by urban areas generated more boat-days than they received. In addition to Sub-Regions 1A and 1B, these included the Flint, Lansing, Saginaw-Bay City, and Grand Rapids Regions (Regions 5, 6, 7A, and 8A). All other regions received more boat-days than they generated. This was most pronounced in the northern Lower Peninsula, which imported over half of its boat-days. This area received 33% of the state's boat-days, but generated only 16% of them.

Economic Impacts of Boating

Although Michigan has larger boat registration numbers than other states (according to U.S. Coast Guard statistics), it ranks third nationally in marine sales (Table 15-19). Sales volumes vary considerably from year to year, depending on economic conditions (Tables 15-5 and 15-20). Boating-related employment and business in turn vary with these sales volumes (Table 15-21). In 1988 Michigan had 223 boat dealerships which employed about 1,800 persons.

Owners of larger boats spend much more than owners of smaller boats (Stynes, et. al., 1983). Therefore, Great Lakes boaters, with their larger boats, spend much more per boat and per boat-day than do inland boaters (Table 15-4).

Forecasts of Boating Activity

Boating activity in Michigan doubled between 1974 and 1986; an annual growth rate of about 6% (Figure 15-4). Barring an energy crisis, total activity is projected to continue to grow at a more modest 2.3% per year for the next few years (Figure 15-12). Use of large boats (21 feet long or more) grew faster than average, increasing 8% per year between 1974 and 1986. Large boat use is projected to increase 3.4% per year in the near future (Figure 15-12).

Forecasts were also developed of boat use under the following fuel price scenarios:

1. Status quo: relative fuel price stays the same as in 1986;

2. Energy crisis: relative fuel prices are 2.5 times those in 1986, approximating the initial energy crisis of 1974, except with price rationing instead of the government rationing of 1974; and

3. Energy glut: relative fuel prices are half those of 1986.

The resulting projections indicate that an energy crisis or an energy glut could decrease or increase boating levels by 5% to 12% compared to use levels at 1986 energy prices (Table 15-22; Figures 15-13 through 15-16). Specifically, decreases or increases of up to 8%, 12%, 9%, and 5% for Great Lakes use by small and large boats, and for inland waters use by small and large boats, respectively, could be expected with such price variations.

Table 15-19. Estimated marine sales by state, 1988.

BOATS[1]			OUTBOARD MOTORS			BOAT TRAILERS			MARINE ACCESSORIES			TOTAL		
Rank	State	Sales ($000)	Rank	State	Sales ($000)	Rank	State	Sales ($000)	Rank	State	Sales ($000)	Rank	State	Sales ($000)
1	FL	854,217	1	FL	225,598	1	FL	18,479	1	■ MI	100,487	1	FL	1,182,657
2	NY	581,982	2	TX	115,276	2	CA	14,699	2	CA	91,763	2	NY	714,222
3	■ MI	483,003	3	CA	84,108	3	MN	13,019	3	MN	86,483	3	■ MI	665,480
4	CA	410,739	4	NY	77,856	4	■ MI	12,064	4	FL	84,363	4	CA	601,309
5	NJ	347,022	5	MN	73,834	5	IL	11,549	5	TX	73,825	5	NJ	417,477
6	MA	294,972	6	NC	70,160	6	WI	9,869	6	WI	60,045	6	TX	406,465
7	OH	294,760	7	■ MI	69,926	7	MO	9,449	7	NY	48,085	7	OH	386,499
8	MD	268,458	8	WI	69,337	8	TX	8,958	8	OH	46,851	8	MA	367,519
9	TX	208,406	9	GA	63,981	9	IN	7,559	9	IL	40,775	9	MD	324,186
10	WA	180,621	10	LA	57,875	10	LA	6,929	10	LA	36,638	10	WI	315,799
11	WI	176,548	11	IL	57,546	11	OH	6,719	11	SC	35,289	11	MN	295,216
12	IL	170,568	12	AL	57,528	12	NY	6,299	12	PA	33,259	12	IL	280,438
13	CT	162,404	13	TN	51,404	13	PA	5,459	13	GA	33,054	13	WA	254,631
14	PA	158,704	14	SC	51,367	13	GA	5,459	13	MO	33,054	14	NC	252,916
15	NC	145,716	15	MO	48,772	14	WA	5,249	14	NC	32,001	15	PA	241,404
16	VA	139,451	16	WA	46,395	15	NC	5,039	15	TN	28,057	16	VA	210,773
17	MN	121,880	17	NJ	45,883	16	AL	4,619	16	MA	27,992	17	CT	202,925
18	IN	119,233	18	PA	43,982	17	VA	4,409	17	IN	26,669	18	IN	184,281
19	TN	91,026	19	VA	43,635	18	AZ	3,968	18	AL	26,528	19	GA	183,517
20	MO	89,709	20	MA	42,246	19	IA	3,359	19	IA	23,393	20	MO	180,984
21	GA	81,023	21	OH	38,169	19	CT	3,359	20	VA	23,278	21	TN	173,426
22	NH	77,549	22	AR	33,032	19	KY	3,359	21	OK	22,648	22	SC	163,164
23	SC	73,569	23	MD	32,338	20	NJ	2,939	22	WA	22,366	23	AL	136,089
24	OR	62,360	24	IN	30,820	20	TN	2,939	23	NJ	21,633	24	LA	123,945
25	ME	50,203	25	KY	30,473	20	SC	2,939	24	MD	21,081	25	OR	103,436
26	AL	47,414	26	CT	25,318	21	OK	2,729	25	OR	19,976	26	KY	93,095
27	KY	44,952	27	IA	22,064	21	OR	2,729	26	MS	19,912	27	NH	92,450
28	UT	38,493	28	MS	21,845	22	KS	2,519	27	AR	18,370	28	IA	85,812
29	IA	36,996	29	OK	20,163	23	MA	2,309	28	ME	15,454	29	ME	85,159
30	CO	33,668	30	OR	18,371	23	MD	2,309	29	AZ	15,043	30	AR	71,204
31	AZ	33,569	31	ME	18,243	24	CO	2,099	30	KY	14,311	31	OK	69,518
32	RI	33,229	32	AZ	15,794	24	SD	2,099	31	CT	11,844	32	AZ	68,374
33	NV	31,932	33	KS	12,869	25	AR	2,036	32	KS	11,202	33	MS	57,499
34	OK	23,978	34	NH	12,448	26	NE	1,259	33	CO	10,341	34	CO	57,222
35	LA	22,503	35	CO	11,114	26	MS	1,259	34	ID	7,669	35	UT	50,998
36	AR	17,766	36	ND	8,756	26	WV	1,259	35	NE	6,937	36	RI	45,732
37	NE	15,838	37	SD	8,628	26	ND	1,259	36	SD	5,729	37	NV	44,129
38	MS	14,483	38	RI	8,372	26	ME	1,259	37	WV	5,665	38	KS	35,681
39	DC	14,284	39	DE	8,079	27	ID	1,049	38	UT	5,652	39	NE	31,821
40	ID	13,226	40	NE	7,787	28	UT	839	39	DE	5,190	40	ID	27,775
41	DE	12,273	41	WV	6,983	28	NV	839	40	ND	5,061	41	DE	25,562
42	VT	11,238	42	NV	6,580	28	NM	839	41	NV	4,778	42	ND	22,153
43	KS	9,091	43	NM	6,197	29	MT	629	42	VT	4,522	43	VT	21,187
44	MT	8,965	44	UT	6,014	29	NH	629	43	NM	4,316	44	SD	21,122
45	ND	7,077	45	ID	5,831	30	VT	419	44	MT	4,290	45	WV	20,668
46	WV	6,761	46	VT	5,008	30	RI	419	45	RI	3,712	46	MT	18,472
47	WY	6,516	47	MT	4,588	30	WY	419	46	WY	2,749	47	DC	16,897
48	SD	4,666	48	WY	3,418	31	DC	83	47	NH	1,824	48	NM	14,272
49	NM	2,920	49	DC	2,029	32	DE	20	48	DC	501	49	WY	13,102
	Total	6,135,961		Total	1,828,040		Total	209,996		Total	1,284,665		Total	9,458,662

NOTE: Estimates are not available for Alaska and Hawaii.

[1] Retail values for inboard boats, inboard/outdrive boats, outboard boats, and auxiliary and non-powered sailboats.

SOURCE: National Marine Manufacturer Association. n.d. *Boating 1989: A Statistical Report on America's Top Family Sport*. Chicago: National Marine Manufacturer Association.

Table 15-20. Attendance at and sales volume of the Detroit Boat and Fishing Show, 1981-90.

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Attendance	68,789	73,986	113,084	130,285	132,350	132,853	135,097	129,887	142,954	125,257
Units sold										
Power	427	435	750	1,871	2,116	2,465	2,119	2,340	2,751	2,233
Sail	52	110	125	203	316	336	516	479	339	210
Total	479	545	875	2,074	2,432	2,801	2,635	2,819	3,090	2,443
Sales volume ($ millions)	6.2	7.2	12.6	39.4	42.5	56.8	58.7	61.2	71.2	54.1
Average length (feet)	21.5	27.2	24.0	26.5	23.2	21.4	23.7	23.9	24.6	24.9
Average cost	$12,907	$13,253	$14,514	$19,032	$17,449	$20,307	$22,277	$21,706	$28,939	$22,141
Average cost per foot	$600	$468	$605	$718	$753	$949	$940	$908	$1,176	$889

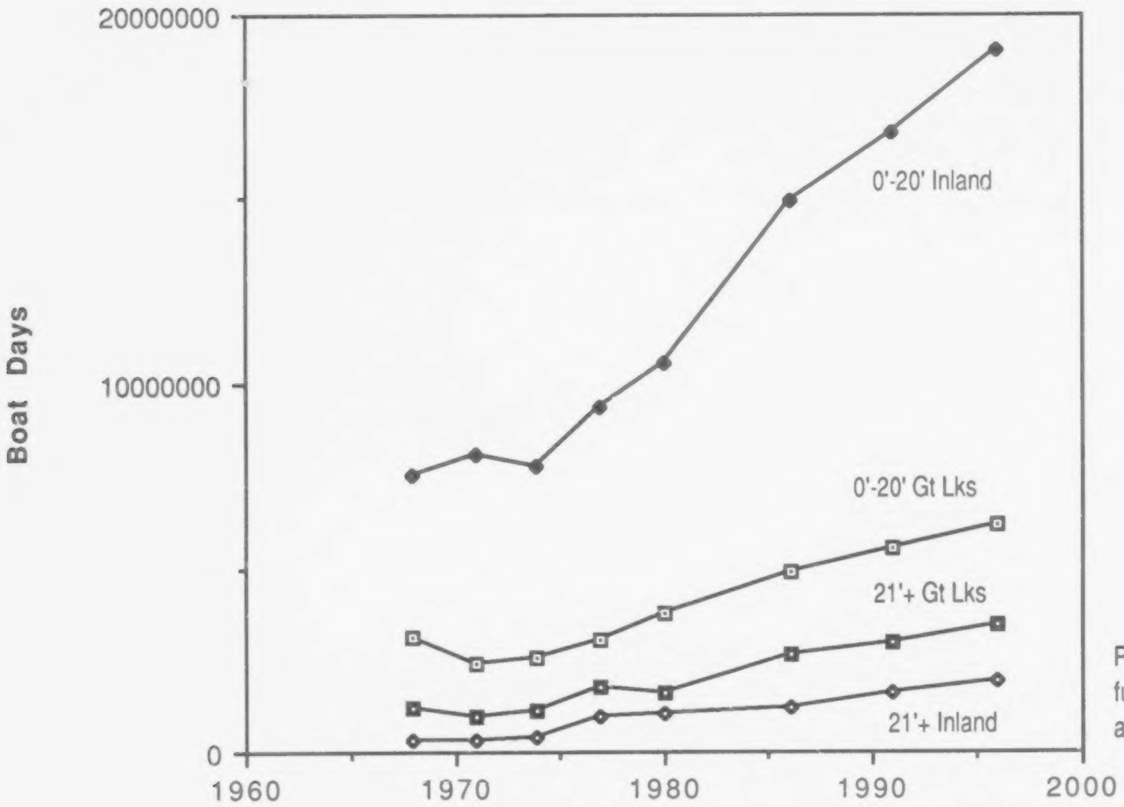
SOURCE: Michigan Boating Industries Association.

Table 15-21. Selected economic characteristics of boat dealers (SIC 555) in Michigan, 1983-88.

Year	Number of employees for week including March 12	Annual payroll ($000)	Number of establishments	Percentage of establishments employing . . .					
				1-4 persons	5-9 persons	10-19 persons	20-49 persons	50-99 persons	100-249 persons
1983	982	18,219	196	66.8	16.3	12.2	4.6	0.0	0.0
1984	1,187	22,748	195	61.0	17.9	14.9	5.6	0.5	0.0
1985	1,299	27,462	190	59.5	18.4	12.6	7.9	1.6	0.0
1986	1,512	31,851	188	54.8	19.1	13.3	10.1	2.7	0.0
1987	1,735	35,729	217	50.2	26.3	12.9	9.2	0.9	0.5
1988	1,795	43,303	223	46.2	29.6	14.3	9.0	0.9	0.0

NOTE: Figures pertain only to establishments that paid Social Security (FICA) taxes.

SOURCE: U.S. Bureau of the Census. County Business Patterns: Michigan, annual. Table 1B.



Projections assume fuel prices remain at 1986 levels

Figure 15-12. Estimated boat-days in Michigan, 1968-86, and projections for 1991 and 1996.

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1989. "Forecasting Recreational Boating in Michigan for 1991 and 1996: Summary of Results and Methods." Technical Report to the Michigan Department of Natural Resources. Travel, Tourism, and Recreation Resource Center, Michigan State University. East Lansing.

Table 15-22. Estimated and projected boat-days in Michigan, 1968-96.

	SMALL BOATS (0'-20') ESTIMATED/PROJECTED AT:			LARGE BOATS (OVER 20') ESTIMATED/PROJECTED AT:		
Year	1986 Prices	Energy Crisis	Energy Glut	1986 Prices	Energy Crisis	Energy Glut
	Great Lakes Boat-Days					
1968	3,096,206			1,217,188		
1971	2,422,400			952,300		
1974	2,552,600			1,093,500		
1977	3,059,500			1,729,540		
1980	3,783,000			1,563,000		
1986	4,909,000			2,614,000		
1991	5,498,102	4,867,788	5,708,207	2,985,237	2,437,282	3,167,888
1996	6,190,313	5,559,998	6,400,417	3,420,505	2,872,551	3,603,157
	Inland Boat-Days					
1968	7,549,044			292,146		
1971	8,046,200			311,500		
1974	7,768,300			430,200		
1977	9,386,550			980,600		
1980	10,546,000			1,028,000		
1986	14,987,088			1,214,286		
1991	16,802,540	14,487,910	17,574,080	1,592,719	1,480,415	1,630,154
1996	19,014,040	16,699,420	19,785,580	1,883,370	1,771,066	1,920,805

NOTE: Figures given for 1968 through 1986 are estimates of actual boat-days in those years, based on surveys conducted at those times. Figures for 1991 and 1996 are forecasts based on statistical analyses of the 1968-86 data. Each forecast is based on one of the three future energy price assumptions, denoted by the column heading.

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1989. "Forecasting Recreational Boating in Michigan for 1991 and 1996: Summary of Results and Methods." Technical Report to the Michigan Department of Natural Resources. Travel, Tourism, and Recreation Resource Center, Michigan State University. East Lansing.

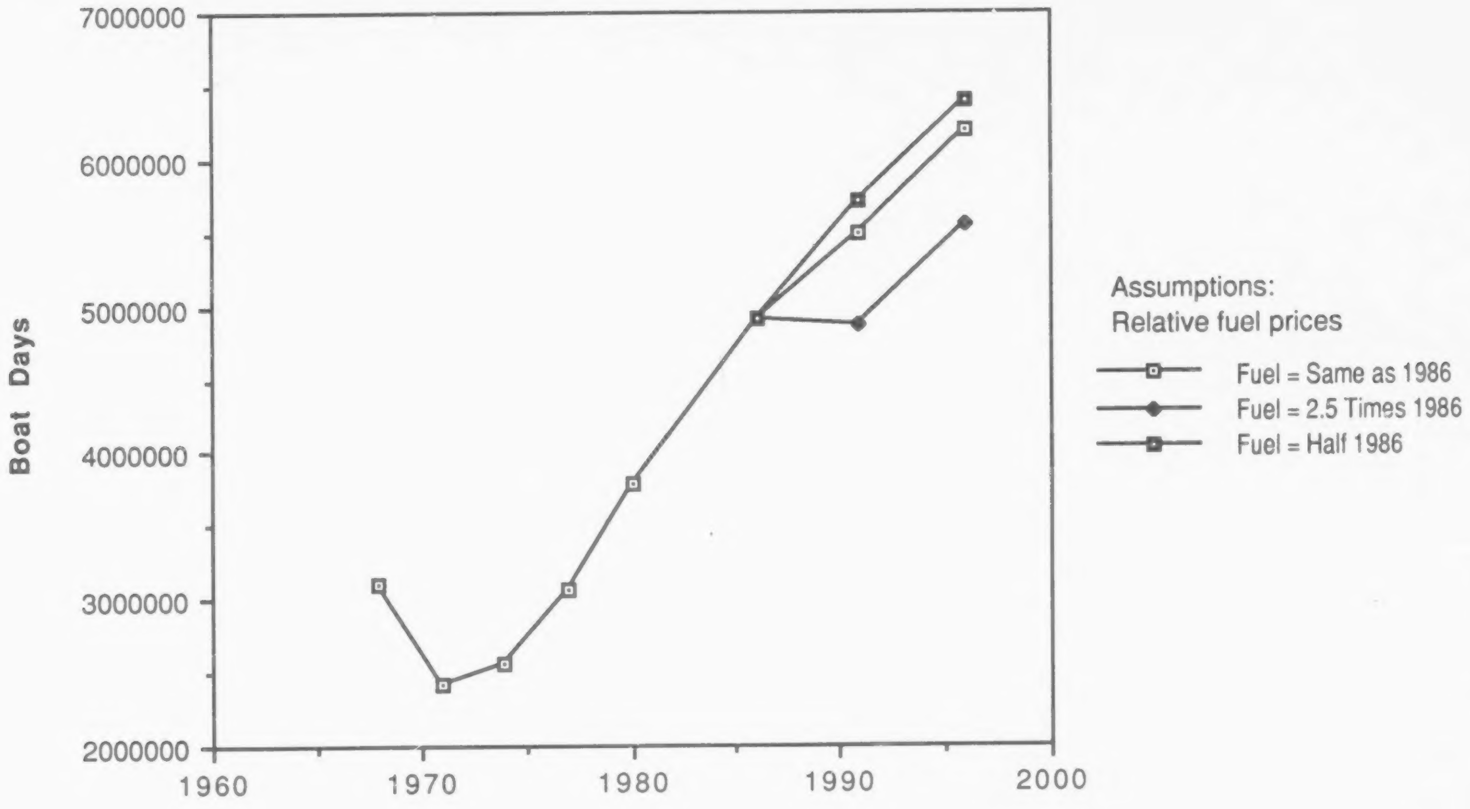


Figure 15-13. Projected Great Lakes boat-days in Michigan by craft under 21' in length.

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1989. "Forecasting Recreational Boating in Michigan for 1991 and 1996: Summary of Results and Methods." Technical Report to the Michigan Department of Natural Resources. Travel, Tourism, and Recreation Resource Center, Michigan State University. East Lansing.

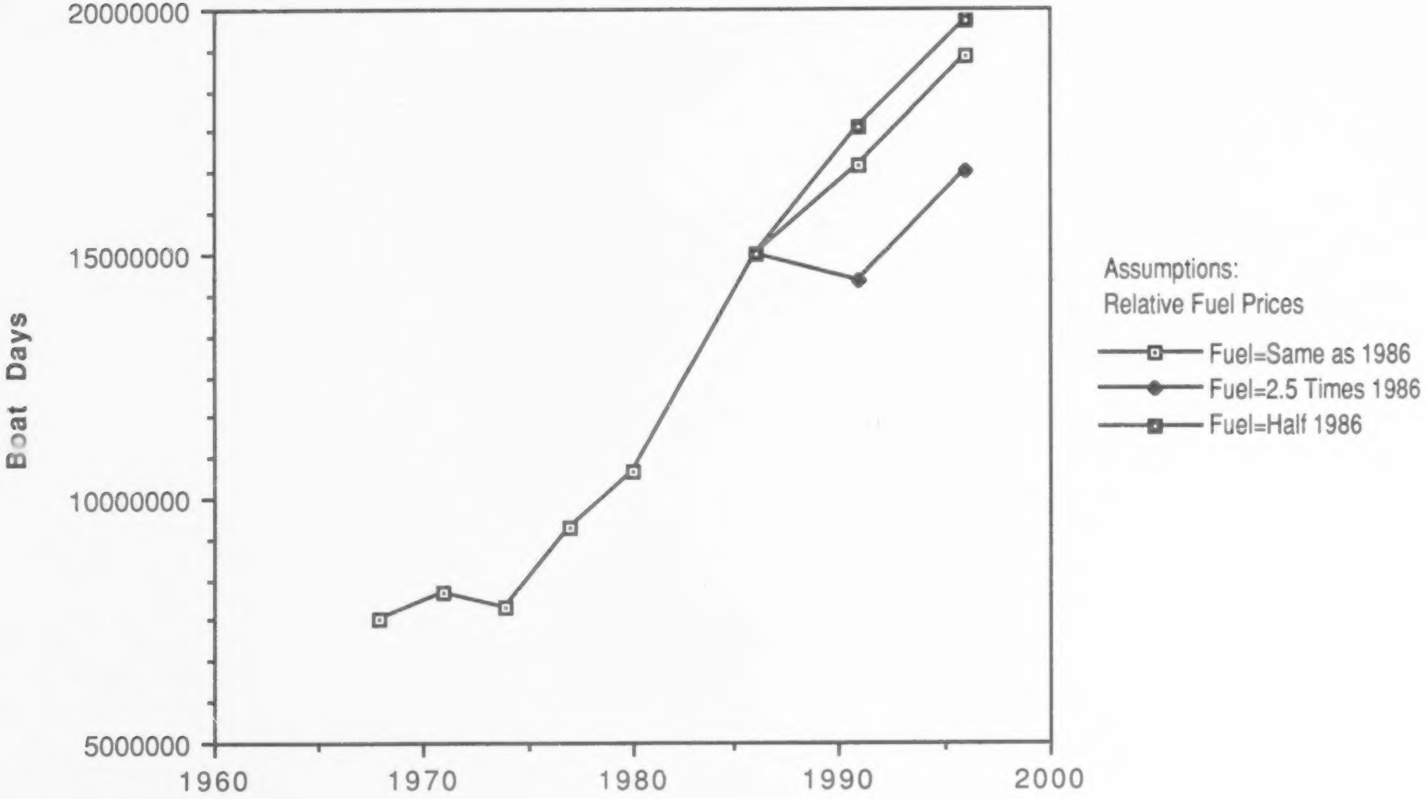


Figure 15-14. Projected inland boat-days in Michigan by craft under 21' in length.

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1989. "Forecasting Recreational Boating in Michigan for 1991 and 1996: Summary of Results and Methods." Technical Report to the Michigan Department of Natural Resources. Travel, Tourism, and Recreation Resource Center, Michigan State University. East Lansing.

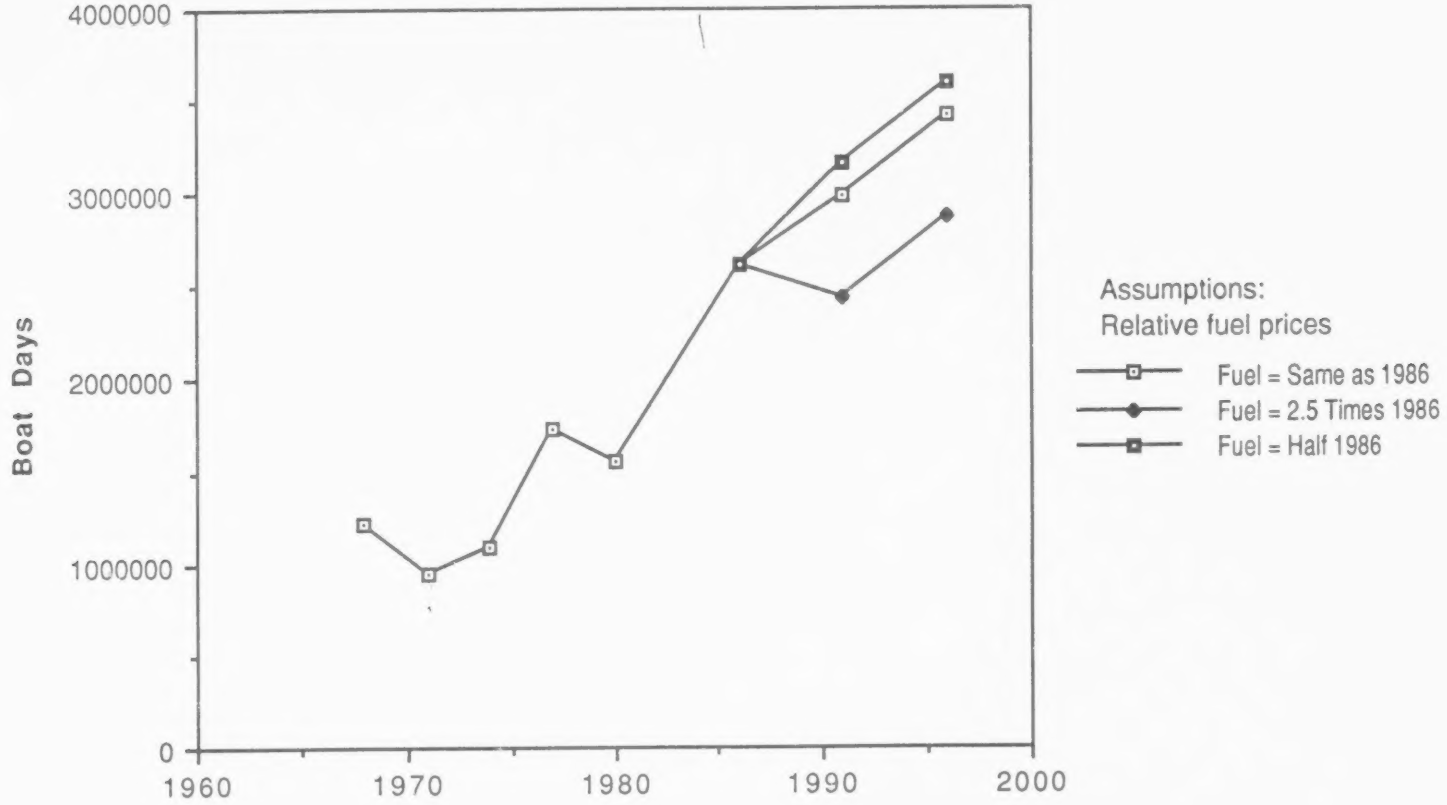


Figure 15-15. Projected Great Lakes boat-days in Michigan by craft 21' in length or longer.

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1989. "Forecasting Recreational Boating in Michigan for 1991 and 1996: Summary of Results and Methods." Technical Report to the Michigan Department of Natural Resources. Travel, Tourism, and Recreation Resource Center, Michigan State University. East Lansing.

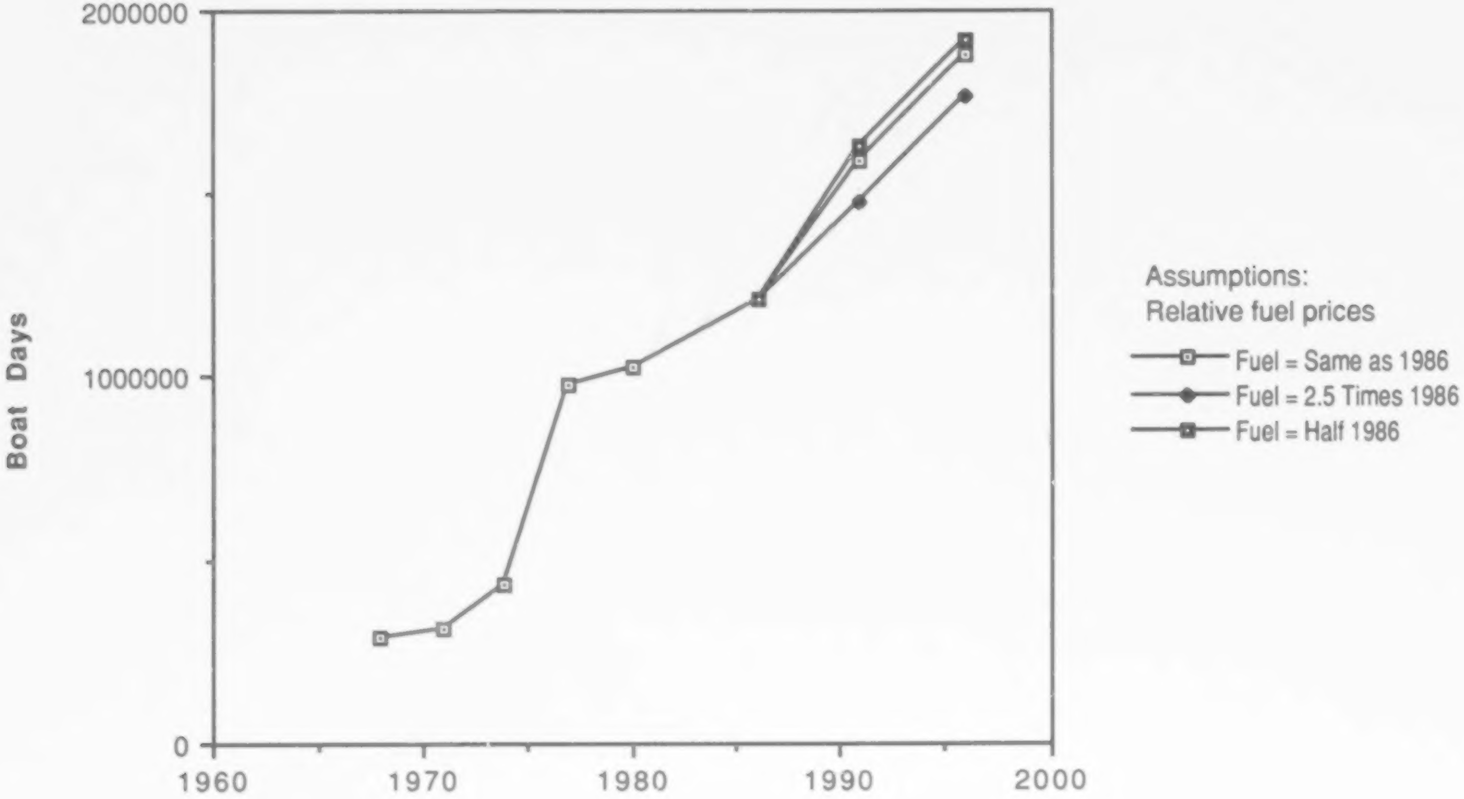


Figure 15-16. Projected inland boat-days in Michigan by craft 21' in length or longer.

SOURCE: Talhelm, Daniel R., Scott W. Jordan, and Donald F. Holecek. 1989. "Forecasting Recreational Boating in Michigan for 1991 and 1996: Summary of Results and Methods." Technical Report to the Michigan Department of Natural Resources. Travel, Tourism, and Recreation Resource Center, Michigan State University. East Lansing.

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CHAPTER 16

RECREATIONAL FISHING IN MICHIGAN

Edward M. Mahoney, Douglas B. Jester, Jr., and Gale C. Jamsen

Introduction

Sport fishing is a popular recreation activity which annually attracts thousands of tourists to Michigan and has a significant impact on the state's economy. However, the number of persons fishing in Michigan appears to be leveling off. This may be largely due to reduced population growth and changes in the age structure of the population. It also may be due in part to lower catch rates of Great Lakes salmon and increased publicity and concerns about the contaminant levels of Great Lakes fish. These changes accentuate the importance of accurate and objective information about this sport so that it can be most advantageously managed and marketed. This chapter provides some such information in the form of statistics on fishing license sales, fish stocking, and the characteristics, preferences, and behavior of anglers in Michigan.

Fishing License Sales in Michigan

Statewide Sales

Nearly 1.6 million persons purchased a daily or annual Michigan fishing license during the 1989 license year (April 1989 through March 1990) (Table 16-1). This included 1.2 million Michigan residents and 376,147 nonresidents. The number of persons holding Michigan fishing licenses has remained relatively constant over the last five years. The number of license holders peaked during the 1987 license year, when 1.64 million persons, including 408,210 nonresidents, purchased a license. Unless significant changes in the quantity and/or quality of fishing opportunities occur, or efforts are made to recruit new anglers, participation rates will probably remain relatively constant during the 1990s.

Fishing license fees, sales, and revenues during the 1989 license year are shown in Table 16-2. Revenues from fishing license sales were $18,552,858. This included the sale of 967,877 resident annual licenses. The sale of nonresident annual licenses generated $2.8 million in revenues. Daily licenses, which can be purchased by residents or nonresidents, generated $1.4 million in revenues. An additional $3.2 million was generated through the sale of trout and salmon stamps.

Changes in fishing license fees, sales, and revenues between the 1984 and 1989 license years are shown in Table 16-3. While license sales increased 11% between 1984 and 1989 (Table 16-1), revenues increased 56% during the same period. This largely resulted from changes in licensing regulations, such as new required licenses and increased license fees which took effect during the 1985 and 1986 license years. In particular, a major change occurred in the licensing requirements for married (resident and nonresident) persons. Prior to the 1985 license year, spouses of licensed resident anglers fished for free, and nonresident married couples could purchase a husband and wife license at a considerable cost savings compared to the purchase of individual nonresident licenses. Beginning in the 1985 license year resident and nonresident married persons were required to purchase separate licenses. This largely explains the 15% increase in the number of resident annual licenses sold and the 89% increase in the number of nonresident annual licenses sold between 1984 and 1989.

Table 16-1. Number of Michigan fishing license holders, 1981-89 license years.

License Year	Resident	Nonresident	Total
1981	1,053,473	322,844	1,376,317
1982	1,056,228	334,758	1,390,986
1983	1,056,100	335,415	1,391,515
1984	1,068,397	346,517	1,414,914
1985	1,110,418	373,492	1,483,910
1986	1,211,533	355,056	1,566,589
1987	1,236,132	408,210	1,644,342
1988	1,219,596	399,889	1,619,485
1989	1,201,728	376,147	1,577,875

NOTE: License years run from April of a given year through March of the following year. Thus the "1987 license year" was April 1, 1987 through March 31, 1988.

SOURCE: Michigan Department of Natural Resources.

Table 16-2. Fishing license fees, sales, and revenues, 1989 license year.

License Type	Fee	Sales	Revenue
Resident Annual[1]	$ 9.85	967,877	$ 9,533,588
Resident Senior	1.00	134,266	134,266
Nonresident Annual[2]	20.35	137,614	2,800,445
Daily	5.35	271,678	1,453,477
Trout and Salmon Stamps	9.85	327,683	3,227,678
Sportsman[3]	19.70	66,440	1,308,868
Salmon Snagging Stamps[4]	7.35	12,862	94,536
Total		1,918,420	$18,552,858

[1] Prior to the 1985 license year spouses fished for free on resident annual licenses. This was discontinued beginning with the 1985 license year.

[2] The sale of nonresident husband and wife licenses was discontinued beginning with the 1985 license year.

[3] Sportsman licenses include hunting and fishing. $19.70 represents the cost of a resident fishing license ($9.85) and trout and salmon stamp ($9.85). Prior to the 1985 license year, anglers who purchased a sportsman license were also required to purchase a trout and salmon stamp if they wished to fish for these species.

[4] Beginning with the 1986 license year, snagging stamps as well as fishing licenses were required to snag salmon within liberalized salmon fishing areas.

SOURCE: Michigan Department of Natural Resources.

Table 16-3. Changes in fishing license fees, sales, and revenues, 1989 license year versus 1984 license year.

	FEE			NUMBER SOLD			REVENUES		
LICENSE TYPE	1984	1989	Percent Change	1984	1989	Percent Change	1984	1989	Percent Change
Resident Annual[1]	$ 7.25	$ 9.85	+ 35.9	839,582	967,877	+ 15.3	$ 6,086,970	$ 9,533,588	+ 56.6
Resident Senior	1.00	1.00	0.0	127,365	134,266	+ 5.4	127,365	134,266	+ 5.4
Nonresident Annual	15.25	20.35	+ 33.4	72,836	137,614	+ 88.9	1,110,749	2,800,445	+152.1
Nonresident Husband and Wife[2]	20.25	---	---	49,676	---	---	1,005,939	---	---
Daily	3.75	5.35	+ 42.7	186,749	271,678	+ 45.5	700,309	1,453,477	+107.5
Trout and Salmon Stamps[3]	7.25	9.85	+ 35.9	364,873	327,683	- 10.2	2,645,329	3,227,678	+ 22.0
Sportsman[4]	7.25	19.70	+171.7	30,950	66,440	+114.7	224,388	1,308,868	+483.3
Salmon Snagging Stamps[5]	---	7.35	---	---	12,862	---	---	94,536	---
Total							$11,901,049	$18,552,858	+ 55.9

[1] Prior to the 1985 license year spouses fished for free on resident licenses. This was discontinued beginning with the 1985 license year.

[2] The sale of nonresident husband and wife licenses was discontinued beginning with the 1985 license year.

[3] After the 1984 license year, anglers who purchased a sportsman license were not required to purchase a trout and salmon stamp if they wished to fish for these species. Thus, while 327,683 persons purchased trout and salmon stamps in 1989 (a 10.2% decline from 1984), an additional 66,440 persons who purchased a sportsman license also paid for the privilege of catching trout and salmon, since such fishing was permitted with this type of license.

[4] Sportsman licenses include hunting and fishing. $19.70 represents the cost of a resident fishing license ($9.85) and a trout and salmon stamp ($9.85). Prior to the 1985 license year anglers who purchased a sportsman license were also required to purchase a trout and salmon stamp if they wished to fish for these species.

[5] Beginning with the 1986 license year, snagging stamps as well as fishing licences were required to snag salmon within liberalized salmon fishing areas.

SOURCE: Michigan Department of Natural Resources.

The sale of sportsman licenses increased 115% between 1984 and 1989, largely because of a number of changes which increased the relative value of such licenses. For example, beginning in the 1985 license year, persons who purchased sportsman licenses were no longer required to also purchase trout and salmon stamps. This helps to explain the 10% decrease in the number of stamps purchased between 1984 and 1989.

Beginning in the 1986 license year, persons wishing to snag salmon at liberalized salmon fishing sites were required to purchase a snagging permit in addition to their annual (resident or nonresident) license. Nearly 13,000 persons purchased such permits during the 1989 license year.

Beginning in the 1985 license year, the cost of annual resident licenses increased 36% from $7.25 to $9.85, the cost of nonresident annual licenses increased 33% from $15.25 to $20.35, and the cost of trout and salmon stamps increased 36% from $7.25 to $9.85. In the 1986 license year the cost of daily licenses increased 43% from $3.75 to $5.35.

Sales in Michigan's Counties

Statistics on the number of Michigan residents who held annual licenses during the 1989 license year, by county and gender of license holder, are presented in Table 16-4. More than a quarter (30%) of the persons who held an annual resident license resided in three southeastern counties--Wayne, Macomb, and Oakland. An additional 13% resided in Genesee, Kent, and Ingham counties. Rural counties contained a higher proportion of women license holders and a greater number of license holders per capita.

The number of resident annual, nonresident annual, and daily licenses sold in each county during the 1989 license year is reported in Table 16-5. The table also shows the difference between the number of resident annual licenses sold in a given county and the number of residents of that county holding licenses. For example, 6,519 resident licenses were sold in Mason County (Table 16-5), and 4,866 residents of Mason County purchased a resident license (Table 16-4). Therefore, at least 6,519 minus 4,866 or 1,653 residents of other Michigan counties purchased licenses in this county. Since many persons purchase licenses close to where they fish, this number along with sales of daily licenses (most of which are purchased by residents of other states) and sales of nonresident annual licenses provide an indication of fishing activity by persons residing outside of a given county. The largest number of *nonresident* annual and daily licenses were sold in counties with large numbers of charter boats (e.g., Berrien, Mason, Manistee, Allegan, Ottawa), and/or in counties bordering other states (e.g., Monroe, Berrien, Iron). Moreover, in these counties relatively large numbers of *resident* annual licenses were sold to residents of other counties of the state.

Supply of Fishing Opportunities in Michigan

An understanding of variations in the "supply" of fishing opportunities in Michigan over space and time is fundamental to the management and marketing of this sport. However, it is difficult to provide a summary measure of "supply" since the latter is a function of many factors, including the number of lakes and streams that support catchable populations of fish and are accessible to anglers, the sizes of these populations, fishing regulations, catch rates of fish, and public awareness of fishing opportunities. While statistics on all of these variables are not available, statistics do exist on water resources and fish stocking in each of Michigan's counties. This information can at least provide a foundation for understanding spatial variations in the supply of fishing opportunities in Michigan.

Table 16-4. Number of resident men and women who held annual fishing licenses, by Michigan county, 1989 license year.

County	Men	Women	Total	Percent of Resident Annual Licenses
Alcona	2,277	497	2,774	0.2
Alger	2,337	530	2,867	0.2
Allegan	11,102	2,503	13,605	1.1
Alpena	5,978	1,466	7,444	0.6
Antrim	3,399	716	4,115	0.3
Arenac	3,354	946	4,300	0.4
Baraga	1,538	161	1,699	0.1
Barry	5,909	1,350	7,259	0.6
Bay	18,853	4,832	23,685	2.0
Benzie	2,451	439	2,890	0.2
Berrien	18,246	4,364	22,610	1.9
Branch	5,514	1,387	6,901	0.6
Calhoun	14,501	3,693	18,194	1.5
Cass	5,632	1,211	6,843	0.6
Charlevoix	4,184	821	5,005	0.4
Cheboygan	3,743	800	4,543	0.4
Chippewa	4,867	1,098	5,965	0.5
Clare	5,355	1,199	6,554	0.6
Clinton	6,781	1,738	8,519	0.7
Crawford	1,894	383	2,277	0.2
Delta	7,136	1,707	8,843	0.7
Dickinson	4,763	1,236	5,999	0.5
Eaton	10,622	2,590	13,212	1.1
Emmet	4,240	950	5,190	0.4
Genesee	49,484	12,682	62,166	5.3
Gladwin	4,865	1,053	5,918	0.5
Gogebic	3,411	669	4,080	0.3
Grand Traverse	10,303	2,065	12,368	1.0
Gratiot	6,312	1,433	7,745	0.7
Hillsdale	5,744	1,481	7,225	0.6
Houghton	4,603	749	5,352	0.5
Huron	6,207	1,226	7,433	0.6
Ingham	28,926	6,873	35,799	3.0
Ionia	7,107	1,435	8,542	0.7
Iosco	7,269	1,840	9,109	0.8
Iron	2,680	429	3,109	0.3
Isabella	5,372	1,147	6,519	0.6
Jackson	14,712	3,078	17,790	1.5
Kalamazoo	21,478	4,588	26,066	2.2
Kalkaska	2,116	415	2,531	0.2
Kent	44,951	8,499	53,450	4.5
Keweenaw	301	23	324	0.0
Lake	1,525	278	1,803	0.2
Lapeer	9,410	1,941	11,351	1.0

Leelanau	2,544	438	2,982	0.3
Lenawee	10,953	2,259	13,212	1.1
Livingston	9,708	1,620	11,328	1.0
Luce	1,641	370	2,011	0.2
Mackinac	2,323	625	2,948	0.2
Macomb	74,946	13,852	88,798	7.5
Manistee	4,230	683	4,913	0.4
Marquette	12,838	2,004	14,842	1.3
Mason	4,160	706	4,866	0.4
Mecosta	5,169	1,142	6,311	0.5
Menominee	4,702	1,228	5,930	0.5
Midland	12,117	2,806	14,923	1.3
Missaukee	1,919	416	2,335	0.2
Monroe	16,277	4,044	20,321	1.7
Montcalm	9,087	1,941	11,028	0.9
Montmorency	2,151	531	2,682	0.2
Muskegon	19,546	3,503	23,049	1.9
Newaygo	5,780	1,445	7,225	0.6
Oakland	77,993	14,088	92,081	7.8
Oceana	3,745	671	4,416	0.4
Ogemaw	3,109	729	3,838	0.3
Ontonagon	2,080	405	2,485	0.2
Osceola	3,734	809	4,543	0.4
Oscoda	1,480	393	1,873	0.2
Otsego	3,458	854	4,312	0.4
Ottawa	20,184	3,478	23,662	2.0
Presque Isle	2,903	565	3,468	0.3
Roscommon	4,939	1,673	6,612	0.6
Saginaw	28,451	7,336	35,787	3.0
Saint Clair	18,766	3,312	22,078	1.9
Saint Joseph	8,191	2,270	10,461	0.9
Sanilac	5,099	796	5,895	0.5
Schoolcraft	2,104	543	2,647	0.2
Shiawassee	10,289	2,785	13,074	1.1
Tuscola	9,972	2,339	12,311	1.0
Van Buren	10,480	2,316	12,796	1.1
Washtenaw	19,266	4,373	23,639	2.0
Wayne	143,144	28,904	172,048	14.5
Wexford	4,784	973	5,757	0.5
Total	975,170	208,289	1,183,459	100.0

SOURCE: Michigan Department of Natural Resources.

Table 16-5. Number of resident annual, nonresident annual, and daily fishing licenses sold, by Michigan county, 1989 license year.

County	No. Resident Annual Licenses Sold	No. Resident Annual Licenses Sold Minus No. Residents Holding Annual Licenses[1]	No. Non-Resident Annual Licenses Sold	No. Daily Licenses Sold
Alcona	4,133	1,359	450	3,185
Alger	2,799	- 68	965	1,531
Allegan	10,119	- 3,486	1,621	7,127
Alpena	8,643	1,199	965	1,834
Antrim	5,442	1,327	1,068	1,730
Arenac	12,319	8,019	752	2,713
Baraga	1,666	- 33	760	1,753
Barry	7,373	114	991	1,178
Bay	16,272	- 7,413	286	1,309
Benzie	5,161	2,271	1,918	9,737
Berrien	15,086	- 7,524	7,201	38,348
Branch	6,870	- 31	5,805	3,553
Calhoun	10,802	- 7,392	275	624
Cass	7,397	554	7,978	6,782
Charlevoix	5,258	253	856	3,080
Cheboygan	8,227	3,684	1,859	2,161
Chippewa	8,347	2,382	3,703	2,897
Clare	8,851	2,297	433	923
Clinton	5,971	- 2,548	82	226
Crawford	4,445	2,168	700	2,321
Delta	7,005	- 1,838	1,952	3,291
Dickinson	4,279	- 1,720	1,962	2,308
Eaton	6,527	- 6,685	63	281
Emmet	6,107	917	1,405	2,078
Genesee	31,283	- 30,883	345	1,234
Gladwin	5,823	- 95	156	393
Gogebic	3,068	- 1,012	5,281	9,947
Grand Traverse	10,239	- 2,129	1,267	4,939
Gratiot	3,899	- 3,846	38	170
Hillsdale	5,457	- 1,768	1,815	897
Houghton	4,496	- 856	806	1,322
Huron	12,678	5,245	337	2,666
Ingham	10,143	- 25,656	14,548	564
Ionia	4,751	- 3,791	49	184
Iosco	16,570	7,461	1,113	7,371
Iron	2,658	- 451	4,701	4,839
Isabella	4,694	- 1,825	81	260
Jackson	11,802	- 5,988	797	747
Kalamazoo	12,925	- 13,141	533	1,159
Kalkaska	3,499	968	277	637
Kent	154,751	101,301	2,987	13,220
Keweenaw	387	63	355	1,845
Lake	3,467	1,664	932	3,494

Lapeer	7,682	- 3,669	69	206
Leelanau	4,311	1,329	1,224	4,138
Lenawee	7,024	- 6,188	1,007	828
Livingston	7,095	- 4,233	153	508
Luce	2,411	400	536	780
Mackinac	5,905	2,957	3,924	2,933
Macomb	59,668	- 29,130	462	2,757
Manistee	7,801	2,888	4,283	15,789
Marquette	10,556	- 4,286	979	3,904
Mason	6,519	1,653	4,307	14,399
Mecosta	8,164	1,853	477	708
Menominee	4,155	- 1,775	1,821	3,362
Midland	9,981	- 4,942	190	779
Missaukee	2,641	306	149	333
Monroe	20,869	548	3,753	6,253
Montcalm	7,254	- 3,774	235	309
Montmorency	4,770	2,088	590	875
Muskegon	16,309	- 6,740	1,472	8,254
Newaygo	9,622	2,397	1,725	6,749
Oakland	65,987	- 26,094	760	3,184
Oceana	4,864	448	1,125	3,340
Ogemaw	5,042	1,204	247	371
Ontonagon	2,065	- 420	1,219	2,735
Osceola	3,982	- 561	148	428
Oscoda	2,679	806	207	464
Otsego	4,844	532	450	675
Ottawa	10,119	- 13,543	540	6,253
Presque Isle	4,162	694	504	1,683
Roscommon	16,361	9,749	2,053	3,211
Saginaw	15,163	- 20,624	201	602
Saint Clair	25,671	3,593	1,283	2,501
Saint Joseph	8,399	- 2,062	4,484	4,398
Sanilac	5,615	- 280	109	954
Schoolcraft	3,183	536	1,132	1,910
Shiawassee	5,632	- 7,442	21	157
Tuscola	8,978	- 3,333	67	322
Van Buren	9,110	- 3,686	3,156	5,860
Washtenaw	11,437	- 12,202	286	758
Wayne	82,156	- 89,892	814	3,463
Wexford	6,842	1,085	817	1,811

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[1] For example: 4,133 resident licenses were sold in Alcona county; 2,774 residents held annual licenses. Therefore, at least 4,133 - 2,774 or 1,359 resident annual licenses were purchased by residents of other counties.

SOURCE: Michigan Department of Natural Resources.

Statistics on water resources by county are presented in the preceding chapter (Table 15-2; page 260). Statistics on the number of fish stocked in Michigan counties are presented below in Tables 16-6 through 16-12. These statistics include stocking in public waters by the Michigan Department of Natural Resources, the U.S. Fish and Wildlife Service, and private individuals and organizations with stocking permits. The tables show the number and weight of fish stocked statewide and the number and weight of salmonid and non-salmonid fish stocked in the Great Lakes and inland waters in each of Michigan's counties.

A Profile of Resident and Nonresident Anglers

The last comprehensive study of the characteristics, preferences, and behavior of Michigan anglers was conducted in 1984 (Mahoney, Jester, and Stynes, 1986). The results of this study are summarized below.

A total of 44,000 questionnaires were mailed to a random sample of resident and nonresident license holders in 1984. The questionnaires were mailed on five different dates during the year to avoid seasonal biases. Fifty-seven percent of the questionnaires were returned. Certified letters and telephone calls were used to identify and correct for non-response bias. Further information on procedures is provided in Kikuchi (1986).

Angler Characteristics

Over half (52%) of Michigan resident licensed anglers owned a boat or canoe used for fishing (Table 16-13). A third of the boats were 12 feet or less in length. Two thirds were 15 feet or less. Only 9% were 20 feet or longer. A significant percentage of fishing was done from private boats.

The greatest percentage (44%) of resident anglers considered themselves to be somewhat experienced (Table 16-14). Nine percent considered themselves beginners and only 4% rated themselves as experts. Nonresidents reported similar skill levels.

The vast majority (88%) of licensed anglers were White. The remaining 11% consisted of 2.6% Blacks, 0.5% Hispanics, 0.2% Native Americans, 0.1% Orientals, and 8.9% mixed races (Table 16-15). Three-quarters of resident licensed anglers were married. Almost two-thirds (64%) of the spouses of licensed resident anglers fished. Nonresident license holders were younger, better educated, and had higher incomes than resident anglers. The mean age of nonresidents was 41, versus 43 for residents. A quarter (25%) of the nonresident anglers and 18% of the resident anglers had a college degree or higher level of education. Fourteen percent of the nonresidents had family incomes of $50,000 or more, in contrast to 8% of the residents. Conversely, 14% of the residents had family incomes of less than $10,000, compared to only 7% of the nonresidents.

Angler Behavior Patterns

Almost a quarter of Michigan resident anglers fished out-of-state each year (Table 16-16). Three-quarters of these anglers fished in only one other state or country. Five percent fished in three or more other states/countries. Almost half (46%) of those who fished out-of-state fished in Canada, 22% fished in Florida, and 10% fished in Ohio, primarily in Lake Erie (Table 16-17). Walleye, bass, and pike were the species most often sought on out-of-state trips.

Table 16-6. Number of fish planted in Michigan by species by type, 1989.

SPECIES	FRY		FINGERLING				YEARLING		ADULT		TOTAL
			SPRING		FALL						
	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Weight
Atlantic Salmon Sebago	0	0	0	0	0	0	42,284	3,807	0	0	3,807
Brook Trout Assinica	0	0	38,000	19	0	0	0	0	3,240	915	935
Brook Trout Hybrid	0	0	0	0	6,900	190	0	0	0	0	190
Brook Trout	0	0	73,920	59	81,250	1,076	147,329	6,501	5,014	2,412	10,048
Brown Trout	0	0	0	0	372,402	7,502	2,208,109	107,334	3,751	822	115,658
Chinook Salmon	0	0	8,335,755	36,312	0	0	0	0	0	0	36,312
Coho Salmon Michigan	0	0	0	0	10,000	71	2,857,597	62,188	0	0	62,259
Lake Trout	0	0	682,500	578	2,955,000	27,068	3,034,050	68,622	5,431	11,620	107,887
Rainbow Trout	0	0	0	0	378,310	6,997	1,321,224	90,889	4,203	1,703	99,589
Splake Michigan	0	0	0	0	100,000	1,713	0	0	0	0	1,713
Steelhead	497,650	73	0	0	652,160	2,050	804,816	56,315	0	0	58,437
Black Crappie	0	0	0	0	0	0	0	0	296	0	0
Bluegill	0	0	0	0	325	6	0	0	483	0	6
Channel Catfish	0	0	0	0	45	1	157,063	1,409	70	103	1,513
Fathead Minnow	0	0	0	0	0	0	0	0	100,000	136	136
Great Lakes Muskellunge	0	0	0	0	500	29	0	0	0	0	29
Golden Shiner	0	0	0	0	0	0	0	0	13,080	66	66
Hybrid Sunfish	0	0	0	0	28,300	266	3,075	147	39,130	349	762
Largemouth Bass	0	0	0	0	5,479	59	464	65	90	0	125
Northern Muskellunge	0	0	0	0	6,762	252	0	0	0	0	252
Northern Pike	22,000	0	263,188	1,136	1,000	38	798	166	2,703	1,045	2,386
Pumpkinseed	0	0	0	0	0	0	0	0	90	0	0
Redear Sunfish	0	0	0	0	67,620	93	0	0	0	0	93
Smallmouth Bass	0	0	0	0	157,109	202	0	0	28	18	220
Smelt	0	0	0	0	0	0	0	0	2,500	46	46
Spottail Shiner	0	0	0	0	0	0	0	0	49,462	454	454
Tiger Musky	0	0	0	0	132,540	6,573	0	0	0	0	6,573
Walleye Bay de Noc	11,798,000	54	975,600	704	1,009,983	1,161	0	0	0	0	1,919
Walleye	0	0	0	0	45,875	250	8,500	350	0	0	600
Walleye Manistique	500,000	3	0	0	0	0	0	0	0	0	3
Walleye Muskegon	15,539,550	142	2,333,206	1,563	152,227	1,110	250	56	0	0	2,871
Yellow Perch	0	0	0	0	0	0	0	0	26,616	672	672

NOTE: Figures include private plants. Numbers planted are estimates calculated from the measured weight (KG) of fish stocked and the measured number of fish per kilogram. Weight figures are in kilograms (1 KG = 2.2 lbs). Lake Trout numbers include fish planted from the federal distribution system.

SOURCE: Michigan Department of Natural Resources, Fisheries Division.

Table 16-7. Number and weight of trout stocked in inland streams in Michigan, by county, 1989.

COUNTY	BROOK TROUT No. Fish	BROOK TROUT Weight (lbs.)	BROWN TROUT No. Fish	BROWN TROUT Weight (lbs.)	RAINBOW TROUT No. Fish	RAINBOW TROUT Weight (lbs.)	STEELHEAD No. Fish	STEELHEAD Weight (lbs.)
Alcona	0	0	6,000	132	6,000	205	0	0
Alger	11,020	1,094	4,098	613	0	0	0	0
Allegan	5,930	642	19,565	1,678	0	0	0	0
Arenac	0	0	6,000	660	0	0	0	0
Baraga	0	0	8,500	1,409	0	0	0	0
Barry	1,400	152	34,420	2,985	0	0	0	0
Benzie	0	0	65,750	1,918	0	0	0	0
Berrien	4,740	514	24,300	1,931	27,509	823	0	0
Branch	0	0	7,400	586	0	0	0	0
Calhoun	0	0	54,700	3,986	0	0	0	0
Cass	0	0	30,700	2,511	0	0	0	0
Charlevoix	10,000	1,079	3,000	290	0	0	0	0
Cheboygan	2,202	1,863	0	0	1,340	1,053	13,050	1,232
Chippewa	900	91	0	0	0	0	0	0
Clare	0	0	6,750	652	0	0	0	0
Crawford	0	0	22,091	1,607	0	0	0	0
Delta	19,600	746	44,000	5,545	63	15	0	0
Dickinson	10,459	1,015	0	0	0	0	0	0
Eaton	0	0	1,500	147	0	0	0	0
Emmet	14,000	1,517	0	0	0	0	0	0
Genesee	0	0	11,200	887	0	0	0	0
Gladwin	0	0	2,000	193	0	0	0	0
Gogebic	1,200	126	1,000	169	0	0	0	0
Hillsdale	0	0	20,200	1,559	0	0	0	0
Houghton	3,500	389	6,000	992	0	0	0	0
Ionia	0	0	34,700	2,239	0	0	0	0
Iron	0	0	8,480	1,275	2,000	259	0	0
Jackson	0	0	6,100	464	0	0	0	0
Kalamazoo	0	0	9,500	880	0	0	0	0
Kalkaska	5,100	108	39,018	3,409	1,500	0	6,000	568
Kent	0	0	44,284	3,803	13,700	1,336	0	0
Keweenaw	0	0	1,500	239	0	0	0	0
Lake	0	0	18,000	514	0	0	0	0
Lapeer	0	0	2,500	198	0	0	0	0
Luce	6,200	45	4,000	733	0	0	0	0
Mackinac	30,350	1,071	3,600	367	0	0	0	0
Macomb	0	0	7,200	698	0	0	0	0
Manistee	0	0	51,000	4,479	0	0	0	0
Marquette	14,550	443	26,440	4,170	8,160	1,858	0	0
Mason	560	0	47,000	3,606	0	0	0	0
Mecosta	0	0	3,000	238	0	0	0	0
Menominee	4,430	279	1,500	182	0	0	0	0
Montcalm	0	0	31,600	2,380	6,600	694	0	0
Muskegon	9,000	975	12,000	964	0	0	0	0
Newaygo	0	0	36,500	2,756	31,500	3,606	0	0
Oakland	0	0	16,900	1,504	0	0	0	0
Oceana	0	0	5,000	442	0	0	0	0
Ogemaw	0	0	28,511	1,624	0	0	0	0
Ontonagon	0	0	25,060	3,524	17,500	696	0	0
Osceola	0	0	6,000	462	0	0	0	0
Oscoda	0	0	12,000	230	12,000	372	0	0
Ottawa	0	0	3,000	241	0	0	0	0
Presque Isle	0	0	15,198	1,927	0	0	0	0
Saint Clair	0	0	20,000	1,152	0	0	0	0
Saint Joseph	0	0	17,800	1,734	0	0	0	0
Schoolcraft	23,524	2,174	4,000	620	0	0	0	0
Tuscola	0	0	2,700	264	0	0	0	0
Van Buren	1,810	196	24,300	2,282	27,500	873	0	0
Washtenaw	0	0	7,200	695	0	0	0	0
Wexford	0	0	9,000	869	0	0	0	0
Total	180,475	14,519	963,765	81,617	155,372	11,790	19,050	1,800

SOURCE: Michigan Department of Natural Resources, Fisheries Division.

Table 16-8. Number and weight of nonsalmonid fish stocked in inland streams in Michigan, by county, 1989.

COUNTY	BLACK BASS		MUSKELLUNGE		NORTHERN PIKE		TIGER MUSKY		WALLEYE	
	No. Fish	Weight (lbs.)	No. Fish	Weight (lbs.)	No. Fish	Weight (lbs.)	No. Fish	Weight (lbs.)	No. Fish	Weight (lbs.)
Allegan	0	0	0	0	22,000	1	0	0	1,809,975	39
Alpena	0	0	0	0	0	0	0	0	50,000	51
Berrien	0	0	0	0	0	0	0	0	3,117,393	193
Cheboygan	0	0	500	64	0	0	0	0	0	0
Clinton	0	0	0	0	0	0	0	0	20,440	56
Houghton	0	0	0	0	0	0	0	0	15,462	8
Ionia	0	0	0	0	0	0	0	0	408,856	15
Iosco	0	0	0	0	4,000	84	0	0	0	0
Isabella	0	0	0	0	0	0	0	0	5,000	5
Jackson	0	0	0	0	0	0	0	0	8,024	144
Kent	0	0	0	0	0	0	0	0	1,770,000	28
Luce	0	0	266	33	0	0	0	0	2,151	6
Macomb	0	0	0	0	0	0	0	0	37,526	100
Muskegon	0	0	0	0	0	0	0	0	799	0
Oakland	17	0	0	0	0	0	0	0	2,301	21
Ottawa	0	0	0	0	0	0	0	0	800,000	13
Saginaw	0	0	0	0	0	0	0	0	25,000	935
Saint Joseph	0	0	0	0	0	0	0	0	11,155	12
Schoolcraft	0	0	0	0	0	0	2,100	199	12,948	35
Van Buren	0	0	0	0	0	0	0	0	4,990	6
Wexford	0	0	0	0	0	0	0	0	46,347	38
Total	17	0	766	97	26,000	85	2,100	199	8,148,367	1,705

SOURCE: Michigan Department of Natural Resources, Fisheries Division.

Table 16-9. Number and weight of salmonid fish stocked in inland lakes in Michigan, by county, 1989.

COUNTY	BROOK TROUT No. Fish	BROOK TROUT Weight (lbs.)	BROWN TROUT No. Fish	BROWN TROUT Weight (lbs.)	COHO SALMON No. Fish	COHO SALMON Weight (lbs.)	LAKE TROUT No. Fish	LAKE TROUT Weight (lbs.)	RAINBOW TROUT No. Fish	RAINBOW TROUT Weight (lbs.)
Alcona	0	0	0	0	0	0	0	0	3,200	528
Alger	19,400	325	0	0	0	0	0	0	4,275	834
Allegan	0	0	0	0	0	0	0	0	3,530	444
Antrim	0	0	127,449	13,904	0	0	0	0	20,000	2,514
Baraga	8,000	424	2,225	357	0	0	0	0	15,000	3,204
Barry	0	0	5,300	512	0	0	0	0	30,300	1,707
Benzie	0	0	36,000	3,631	0	0	0	0	20,000	2,514
Berrien	0	0	0	0	0	0	0	0	2,630	303
Branch	0	0	0	0	0	0	0	0	32,550	3,566
Calhoun	0	0	0	0	0	0	0	0	5,600	561
Cass	0	0	0	0	10,000	155	0	0	25,890	2,726
Charlevoix	0	0	105,000	16,172	0	0	0	0	84,903	16,336
Cheboygan	0	0	32,500	3,568	0	0	0	0	35,000	6,219
Chippewa	2,650	58	0	0	0	0	0	0	3,290	671
Clare	0	0	5,500	531	0	0	0	0	0	0
Crawford	0	0	35,000	3,783	0	0	600	100	91,579	10,662
Delta	11,300	109	2,000	247	0	0	0	0	5,700	1,072
Gladwin	0	0	500	48	0	0	0	0	0	0
Gogebic	17,310	877	8,100	1,371	0	0	0	0	24,000	4,163
Grand Traverse	0	0	30,000	2,911	0	0	0	0	10,000	1,416
Hillsdale	0	0	0	0	0	0	0	0	8,000	921
Houghton	16,700	725	3,195	509	0	0	0	0	18,750	3,393
Ionia	0	0	0	0	0	0	0	0	2,750	389
Iron	20,025	371	22,200	3,110	0	0	632,500	1,100	15,050	2,910
Isabella	0	0	5,000	491	0	0	0	0	0	0
Jackson	0	0	0	0	0	0	0	0	5,000	482
Kalamazoo	0	0	200	19	0	0	0	0	9,010	1,133

Kalkaska	95	0	22,400	2,194	0	0	0	0	6,730	972
Kent	0	0	700	99	0	0	0	0	10,000	1,001
Keweenaw	0	0	3,500	558	0	0	0	0	24,240	2,502
Lake	0	0	2,000	193	0	0	0	0	0	0
Lapeer	0	0	3,500	277	0	0	0	0	890	130
Leelanau	0	0	79,023	7,234	0	0	0	0	0	0
Lenawee	0	0	0	0	0	0	0	0	6,000	645
Livingston	0	0	0	0	0	0	0	0	7,400	1,048
Luce	37,335	88	0	0	0	0	50,000	171	13,100	2,963
Mackinac	1,850	41	0	0	0	0	0	0	660	120
Manistee	0	0	5,000	483	0	0	0	0	0	0
Marquette	15,875	445	25,600	3,887	0	0	0	0	44,786	6,649
Mason	0	0	500	0	0	0	0	0	0	0
Montcalm	0	0	0	0	0	0	0	0	14,200	1,421
Montmorency	3,000	172	7,500	685	0	0	0	0	27,000	3,934
Muskegon	2,000	217	0	0	0	0	0	0	7,500	751
Newaygo	0	0	12,000	893	0	0	0	0	33,495	4,098
Oakland	0	0	0	0	0	0	5,100	568	39,600	5,361
Ogemaw	0	0	0	0	0	0	0	0	11,500	1,929
Ontonagon	6,725	443	1,400	209	0	0	0	0	4,400	970
Osceola	0	0	3,000	255	0	0	0	0	5,000	629
Oscoda	0	0	1,000	93	0	0	0	0	5,150	1,088
Otsego	0	0	7,500	699	0	0	0	0	7,290	1,665
Ottawa	0	0	200	16	0	0	0	0	0	0
Presque Isle	0	0	18,455	2,108	0	0	0	0	1,500	209
Saint Joseph	0	0	0	0	0	0	0	0	24,490	2,603
Schoolcraft	8,150	476	1,120	169	0	0	0	0	14,725	2,626
Van Buren	0	0	0	0	0	0	0	0	13,180	1,628
Washtenaw	0	0	0	0	0	0	0	0	1,500	173
Wexford	0	0	2,000	0	0	0	0	0	0	0
Total	170,415	4,772	616,567	71,218	10,000	155	688,200	1,939	800,343	113,780

SOURCE: Michigan Department of Natural Resources, Fisheries Division.

Table 16-10. Number and weight of nonsalmonid fish stocked in inland lakes in Michigan, by county and species, 1989.

COUNTY	BLACK BASS		MUSKELLUNGE		NORTHERN PIKE		TIGER MUSKY		WALLEYE	
	No. Fish	Weight (lbs.)	No. Fish	Weight (lbs.)	No. Fish	Weight (lbs.)	No. Fish	Weight (lbs.)	No. Fish	Weight (lbs.)
Alcona	0	0	0	0	15,000	0	0	0	230,726	315
Alger	52,860	139	0	0	0	0	4,150	477	63,782	88
Allegan	0	0	0	0	15,807	520	3,600	389	0	0
Alpena	0	0	0	0	7,500	24	0	0	10,000	10
Antrim	0	0	0	0	0	0	0	0	25,000	44
Arenac	0	0	0	0	0	0	0	0	120,000	210
Baraga	0	0	0	0	0	0	0	0	16,415	11
Barry	0	0	1,115	53	8,768	68	1,800	194	21,715	22
Bay	0	0	0	0	0	0	0	0	28,800	53
Benzie	0	0	0	0	0	0	0	0	1,299	5
Branch	0	0	0	0	5,500	93	6,400	755	34,027	631
Cass	0	0	0	0	0	0	500	54	8,532	11
Charlevoix	0	0	0	0	0	0	0	0	60,200	105
Cheboygan	0	0	0	0	10,000	54	900	88	34,350	288
Chippewa	1,500	39	0	0	0	0	2,500	321	705,516	21
Clare	0	0	772	64	1,664	18	0	0	33,364	62
Clinton	0	0	0	0	0	0	1,600	205	0	0
Crawford	0	0	0	0	7,000	16	8,000	811	0	0
Delta	9,592	22	0	0	0	0	1,425	135	0	0
Dickinson	0	0	0	0	6,853	722	700	66	63,441	459
Emmet	0	0	0	0	0	0	0	0	1,500	1
Gladwin	0	0	0	0	3,000	40	0	0	136,122	345
Gogebic	0	0	0	0	0	0	0	0	31,269	803
Grand Traverse	0	0	0	0	0	0	1,000	128	22,554	39
Hillsdale	0	0	0	0	0	0	2,700	318	9,325	180
Houghton	0	0	0	0	0	0	2,700	256	191,842	238
Ionia	0	0	0	0	0	0	0	0	19,652	34
Iosco	0	0	0	0	0	0	49,010	5,008	81,567	50
Iron	0	0	0	0	16,250	966	0	0	212,693	911
Isabella	0	0	0	0	1,000	21	0	0	0	0
Jackson	0	0	0	0	4,925	90	0	0	9,624	179
Kalamazoo	0	0	0	0	0	0	4,000	513	18,713	138

Kent	0	0	0	0	0	0	2,200	282	52,223	129
Keweenaw	0	0	0	0	0	0	450	43	36,000	37
Lake	0	0	0	0	0	0	3,600	462	0	0
Lapeer	464	144	0	0	0	0	1,600	162	0	0
Leelanau	0	0	0	0	0	0	0	0	6,113,550	145
Lenawee	0	0	922	69	1,000	84	0	0	2,200	82
Livingston	0	0	0	0	0	0	1,500	152	0	0
Luce	80	0	0	0	11,500	179	0	0	555,444	147
Mackinac	11	38	0	0	0	0	0	0	773,630	75
Macomb	0	0	0	0	0	0	0	0	19,475	24
Manistee	0	0	0	0	0	0	0	0	2,372	2
Marquette	55,410	205	0	0	0	0	1,000	95	4,859,231	158
Mason	0	0	0	0	200	4	0	0	102,471	140
Mecosta	0	0	0	0	3,500	0	2,000	273	16,910	19
Menominee	0	0	0	0	3,500	55	0	0	0	0
Midland	0	0	648	6	0	0	0	0	0	0
Missaukee	0	0	0	0	0	0	4,000	546	68,400	132
Montcalm	0	0	0	0	70,000	0	0	0	0	0
Montmorency	0	0	0	0	1,000	21	450	44	21,000	31
Muskegon	0	0	0	0	0	0	1,260	115	485,509	223
Newaygo	0	0	0	0	0	0	0	0	54,419	150
Oakland	0	0	0	0	0	0	0	0	55,727	222
Oceana	0	0	0	0	5,000	105	0	0	4,805	1
Ogemaw	90	0	0	0	4,616	96	1,600	189	266,612	119
Ontonagon	0	0	0	0	0	0	0	0	32,350	35
Oscoda	0	0	0	0	2,500	20	1,600	162	56,467	75
Otsego	0	0	0	0	22,500	85	8,295	799	0	0
Ottawa	0	0	0	0	0	0	0	0	1,035,620	24
Presque Isle	0	0	0	0	32,000	898	0	0	16,000	23
Roscommon	0	0	0	0	0	0	0	0	67,150	87
Saginaw	0	0	0	0	700	11	0	0	0	0
Saint Joseph	0	0	0	0	0	0	1,800	194	4,977	6
Schoolcraft	635	5	0	0	0	0	300	28	7,880	19
Van Buren	0	0	1,146	94	1,600	25	200	22	15,466	21
Washtenaw	0	0	0	0	0	0	4,000	513	0	0
Wayne	0	0	0	0	0	0	3,600	462	0	0
Total	120,642	592	4,603	286	262,883	4,216	130,440	14,262	16,917,916	7,377

SOURCE: Michigan Department of Natural Resources, Fisheries Division.

Table 16-11. Number and weight of Great Lakes salmon and trout stocked in Michigan, by county and species, 1989.

COUNTY	BROWN TROUT		CHINOOK SALMON		COHO SALMON		LAKE TROUT		RAINBOW TROUT		STEELHEAD	
	No. Fish	Weight (lbs.)	No. Fish	Weight (lbs.)	No. Fish	Weight (lbs.)	No. Fish	Weight (lbs.)	No. Fish	Weight (lbs.)	No. Fish	Weight (lbs.)
Alcona	15,055	2,625	409,873	3,758	0	0	454,700	14,800	9,030	1,690	0	0
Alger	25,270	3,123	0	0	50,012	2,959	102,700	5,802	14,800	3,283	5,850	762
Allegan	15,000	1,365	100,000	866	0	0	134,000	4,768	0	0	43,360	2,838
Alpena	115,000	11,765	0	0	0	0	279,400	8,860	15,033	3,135	22,100	2,095
Antrim	0	0	0	0	0	0	0	0	0	0	7,700	730
Arenac	30,013	3,667	125,020	1,448	0	0	0	0	15,008	2,519	9,615	1,290
Baraga	0	0	0	0	0	0	0	0	0	0	17,497	2,972
Benzie	72,000	2,515	0	0	806,202	34,259	218,000	5,782	0	0	130,875	3,028
Berrien	50,000	3,434	400,000	3,269	25,024	1,012	445,000	10,134	9,900	991	98,799	14,083
Charlevoix	15,000	1,452	371,190	3,514	0	0	971,800	46,068	0	0	17,250	2,604
Cheboygan	0	0	0	0	0	0	0	0	100,000	4,577	13,860	1,622
Chippewa	15,000	2,516	182,472	1,595	0	0	367,300	11,777	48,057	6,358	10,951	1,377
Delta	20,000	2,303	176,024	1,387	0	0	0	0	0	0	8,730	1,266
Emmet	15,000	3,536	0	0	0	0	100,000	1,314	14,800	3,753	16,600	2,027
Gogebic	15,060	2,224	77,734	670	75,000	3,533	0	0	0	0	19,400	3,013
Grand Traverse	15,000	1,278	300,093	3,285	0	0	200,000	6,441	0	0	25,620	4,379
Houghton	0	0	0	0	50,012	3,073	0	0	0	0	1,440	213
Huron	55,000	5,390	712,284	11,912	100,007	5,531	797,550	18,964	105,000	10,795	26,680	3,986
Ingham	0	0	0	0	380,073	16,839	0	0	0	0	10,128	1,685
Ionia	0	0	0	0	0	0	0	0	0	0	7,974	1,337
Iosco	40,000	6,431	891,731	8,082	100,017	4,904	0	0	70,057	9,227	317,929	18,453
Isabella	0	0	0	0	0	0	0	0	0	0	10,900	1,029
Kent	0	0	525,000	4,755	20,025	979	0	0	0	0	27,356	4,431
Keweenaw	0	0	0	0	0	0	54,500	3,056	20,800	4,665	1,440	213
Leelanau	15,000	1,449	0	0	0	0	573,000	18,784	0	0	0	0
Luce	0	0	0	0	0	0	0	0	0	0	10,400	1,578
Mackinac	45,000	5,577	384,945	3,344	250,080	12,303	0	0	0	0	18,640	2,625
Manistee	30,000	2,374	922,722	7,872	450,905	24,666	174,000	2,890	0	0	51,228	9,177
Marquette	0	0	203,290	1,663	150,046	7,465	280,000	16,427	35,000	1,749	28,680	4,446
Mason	15,000	1,116	200,070	2,317	0	0	120,000	4,000	0	0	0	0
Menominee	35,000	4,234	0	0	0	0	0	0	20,450	4,400	22,800	3,066
Muskegon	50,000	3,893	337,191	2,650	0	0	300,000	17,873	0	0	85,821	1,499
Newaygo	0	0	0	0	0	0	0	0	0	0	377,050	9,544
Oakland	0	0	0	0	0	0	0	0	0	0	14,580	2,182
Oceana	0	0	0	0	0	0	164,000	3,736	0	0	140,355	4,643
Ogemaw	0	0	0	0	0	0	0	0	0	0	200,384	1,126
Ontonagon	20,120	3,554	76,810	650	0	0	85,900	4,735	14,800	3,225	0	0
Ottawa	33,792	2,435	200,040	1,656	0	0	0	0	34,950	1,967	9,231	1,340
Presque Isle	40,000	3,642	1,009,142	8,281	0	0	161,500	3,636	65,005	10,886	6,400	968
Saint Clair	70,530	6,266	0	0	0	0	0	0	0	0	54,480	4,047
Sanilac	40,000	4,068	484,710	4,941	0	0	0	0	50,000	4,953	0	0
Schoolcraft	10,000	904	145,414	1,157	0	0	0	0	10,000	1,699	7,740	924
Van Buren	35,000	2,146	100,000	815	0	0	0	0	10,000	1,001	37,740	1,288
Wayne	50,350	5,122	0	0	400,194	19,291	0	0	83,412	10,213	17,993	2,877
Total	1,002,190	100,404	8,335,755	79,885	2,857,597	136,814	5,983,350	209,850	746,102	91,085	1,935,576	126,762

SOURCE: Michigan Department of Natural Resources, Fisheries Division.

Table 16-12. Number and weight of nonsalmonid fish stocked in Great Lakes in Michigan, by county and species, 1989.

COUNTY	BLACK BASS No. Fish	 Weight (lbs.)	MUSKELLUNGE No. Fish	 Weight (lbs.)	WALLEYE No. Fish	 Weight (lbs.)
Alpena	0	0	0	0	28,000	28
Baraga	0	0	0	0	67,800	67
Bay	0	0	0	0	500,308	827
Chippewa	0	0	0	0	752,495	190
Delta	12,034	27	0	0	3,270,583	1,048
Iosco	0	0	0	0	108,814	67
Mackinac	30,477	137	1,893	236	2,330,688	88
Menominee	0	0	0	0	96,727	291
Ontonagon	0	0	0	0	65,040	76
Tuscola	0	0	0	0	76,453	99
Total	42,511	164	1,893	236	7,296,908	2,782

SOURCE: Michigan Department of Natural Resources, Fisheries Division.

Table 16-13. Percentage of resident licensed anglers who owned boats/canoes used for fishing.

Status	Percent
Non-owner	47.7
Owner	52.4
Size Distribution of Boats	
12 feet or less	33.0
13-15	33.0
16-[illegible]	25.0
20 feet or greater	9.0

Table 16-14. Self-rated skill level of anglers.

Skill Level	RESIDENTS	NONRESIDENTS
	----------percent----------	
Beginner	8.9	9.0
Somewhat experienced	44.3	41.7
Experienced	42.8	44.5
Expert	4.0	4.8
Total	100.0	100.0

Table 16-15. Socioeconomic characteristics of resident and nonresident licensed anglers.

Characteristic	Residents	Nonresidents
	----------percent---------	
EDUCATION		
Grade School	5.8	2.9
Some High School	12.3	7.3
High School Diploma	35.7	38.1
Some College	28.9	26.9
College Degree	11.5	17.6
Some Grad/Med/Law School	.8	1.3
Advanced Degree	5.0	5.9
Total	100.0	100.0
FAMILY INCOME		
Under $10,000	14.0	7.4
$10,000-$14,999	11.9	9.5
$15,000-$19,999	11.9	13.0
$20,000-$24,999	13.7	10.7
$25,000-$29,999	12.1	11.3
$30,000-$34,999	10.3	9.3
$35,000-$39,999	8.0	11.5
$40,000-$44,999	6.3	6.6
$45,000-$49,999	4.0	6.3
$50,000+	7.8	14.4
Total	100.0	100.0
AGE		
17-19	3.6	4.0
20-24	8.5	8.4
25-29	12.1	12.3
30-34	14.6	14.7
35-39	11.0	15.7
40-44	8.3	7.3
45-49	8.0	8.2
50-54	7.1	3.3
55-59	7.4	10.0
60-64	7.0	6.3
65-69	7.6	5.2
70+	4.8	4.6
Total	100.0	100.0

Table 16-16. Percentage of resident Michigan anglers who fished out-of-state, 1984.

	Percent of Resident Anglers	Percent of Those Who Fished Out-of-State
Did not fish out-of-state	75.9	
Fished out-of-state	24.1	
One state/country		73.0
Two states/countries		21.6
Three or more states/countries		5.4
Total	100.0	100.0

Table 16-17. Other states/countries where Michigan resident anglers fished.

State/Country	Percent of Anglers Who Fished Out-of-State
Florida	21.5
Ohio	9.8
Wisconsin	4.5
Kentucky	3.3
Indiana	3.0
Tennessee	2.9
Minnesota	2.7
Texas	2.2
Montana	1.9
Arkansas	1.8
Alaska	1.6
Colorado	1.5
Illinois	1.4
Alabama	1.4
California	1.4
Wyoming	1.4
North Carolina	1.3
Missouri	1.0
Canada	46.4
Mexico	1.0
Other	10.0

NOTE: Figures add to greater than 100% due to multiple responses. Respondents could list up to 3 out-of-state locations.

Yellow perch (65%), bass (64%), and panfish (64%) were the species sought by the highest percentages of resident anglers (Table 16-18). Walleye (47%) and pike (46%) were next, followed by chinook salmon (30%). A greater percentage of nonresident anglers fished for chinook and coho salmon, especially in streams/rivers, which suggests that these species attract the greatest number of out-of-state anglers.

Over half of resident anglers fished for panfish (58%) and bass (54%) on inland lakes (Table 16-19). More residents fished for perch (35%) than for chinook salmon (24%) on the Great Lakes.

More than half of resident anglers bait-fished for perch (56%) and panfish (52%) (Table 16-20). More anglers fly-fished for panfish (10%) than for brook, brown, or rainbow trout (7%). Trolling was the most frequently used method of fishing for chinook and coho salmon.

"Other anglers" was the most frequently cited source of information used by anglers in deciding where and when to fish (Table 16-22). Forty percent of resident anglers and 52% of nonresident anglers frequently relied on other anglers for information. Almost a quarter (24%) of residents and a third (32%) of nonresidents frequently received information from bait and tackle stores.

Angler Preferences

Bass was the preferred catch species of 22% of resident anglers, followed by walleye (17%), perch (12%), and panfish (10%) (Table 16-23). Almost half (48%) of the out-of-state anglers preferred to catch either bass (23%) or chinook salmon (25%). The preferred eating species of resident anglers were walleye, yellow perch, and panfish.

Forty-six percent of resident anglers preferred to fish on inland lakes (Table 16-24). Only 18% preferred to fish on streams/rivers. Fishing from a private boat was the preferred mode of fishing for 71% of residents. Bait fishing was preferred to other methods by 38% of licensed resident anglers.

Anglers were asked to rank the importance of various attributes in selecting a fishing site. The criteria anglers used in selecting fishing sites varied considerably. Contamination in fish was the most important selection criterion of resident anglers, followed by presence of their favorite species, water clarity, and catch rate of keepable fish (Table 16-25).

Angler Expenditures

Information was also collected on anglers' last fishing trip in Michigan, including the species sought, trip destination, trip length, and expenditures made at home, during travel to and from the destination, and near the fishing site. Average trip and local expenditures by species for both day trips and overnight trips are shown in Table 16-28. The expenditure figures account for the fact that some anglers did not spend anything on their last fishing trip.

Expenditures per day on fishing trips lasting one day or less ranged from a high of $68 for steelhead to a low of $9 for smelt. Average local expenditures were highest for persons fishing for chinook salmon ($12 per angler-day) and lowest for smelt trips ($2.50 per angler-day). Persons fishing for brook trout on the average spent less locally ($2.50) on day trips than persons fishing for any other species.

Table 16-18. Percentage of resident and nonresident anglers who fished for various species.

Species	Residents	Nonresidents
Yellow Perch	65.1	41.4
Panfish	64.2	49.9
Bass	64.4	59.5
Walleye	47.2	44.1
Pike	45.9	37.0
Lake Trout	25.9	28.6
Steelhead	25.0	27.3
Rainbow Trout	21.4	22.1
Brown Trout	24.1	20.0
Brook Trout	19.9	12.5
Chinook Salmon	30.4	47.8
Coho Salmon	29.9	47.3
Catfish	22.8	25.2
Carp	17.6	7.9
Smelt	24.2	7.5

Table 16-19. Locations where resident and nonresident anglers fished for various species.

	RESIDENTS			NONRESIDENTS		
Species	Inland Lakes	Great Lakes	Streams/ Rivers	Inland Lakes	Great Lakes	Streams/ Rivers
	-----percent------			-------percent------		
Yellow Perch	42.1	34.7	7.3	27.8	20.8	3.7
Panfish	58.0	7.2	8.7	43.1	3.4	9.4
Bass	54.2	10.4	13.6	45.9	9.0	19.5
Walleye	26.4	20.7	13.0	29.0	12.9	12.2
Pike	36.4	10.1	9.4	30.3	6.3	6.0
Lake Trout	5.3	20.4	3.8	5.3	21.3	6.7
Steelhead	2.0	15.4	14.7	2.5	17.4	16.1
Rainbow Trout	5.4	4.7	15.2	5.6	7.7	12.8
Brown Trout	3.4	9.8	15.5	2.0	7.3	11.9
Brook Trout	2.3	1.5	18.0	1.6	1.4	11.5
Chinook Salmon	1.4	24.3	10.9	3.9	29.4	23.1
Coho Salmon	1.5	23.6	10.1	5.2	28.7	21.1
Catfish	13.8	5.0	9.4	14.6	3.4	11.9
Carp	5.1	2.0	13.4	5.0	0.4	5.3
Smelt	2.0	12.5	11.9	0.3	3.8	3.0

Table 16-20. Methods resident anglers used to catch various species.

Species	Cast	Spinning	Bait	Trolling	Fly
	------Percent of Resident Anglers-------				
Yellow Perch	11.5	14.8	55.9	5.2	1.5
Panfish	13.9	20.2	51.5	4.2	10.2
Bass	29.6	33.1	35.7	17.5	6.2
Walleye	12.0	14.8	25.3	29.9	.9
Pike	16.5	17.8	23.9	24.0	.9
Lake Trout	4.4	5.4	6.1	18.2	1.0
Steelhead	6.5	10.4	10.2	11.5	3.3
Rainbow Trout	4.9	8.7	11.2	5.3	6.7
Brown Trout	5.1	8.9	11.5	8.0	6.6
Brook Trout	3.9	6.7	11.9	1.5	7.3
Chinook Salmon	6.0	8.1	5.9	20.1	1.7
Coho Salmon	6.2	8.0	6.3	18.7	1.3
Catfish	4.0	3.5	18.2	----	---
Carp/Suckers	2.7	1.9	11.0	----	---

3.7% Snagged Chinook 3.3% Snagged Coho
3.3% Dipped for Carp 4.3% Speared Carp

Table 16-21. Modes resident anglers used to catch various species.

Species	Shore/ Wading	Pier/ Dock	Private Boat	Charter Boat	Ice
	---------Percent of Resident Anglers--------				
Yellow Perch	14.9	19.9	50.0	1.8	25.9
Panfish	22.4	14.9	50.6	---	21.1
Bass	22.6	11.5	52.7	0.7	3.1
Walleye	8.4	5.2	40.2	1.5	6.8
Pike	9.8	4.6	37.0	0.8	12.4
Lake Trout	4.3	4.9	19.7	2.2	1.5
Steelhead	13.3	6.2	12.8	1.6	0.4
Rainbow Trout	15.2	2.6	8.2	0.3	0.9
Brown Trout	15.7	4.3	10.4	0.5	0.7
Brook Trout	17.5	0.9	3.2	---	0.3
Chinook Salmon	10.5	6.9	20.1	3.3	0.2
Coho Salmon	9.5	6.7	19.6	3.1	0.2
Catfish	11.9	6.0	12.4	---	0.4
Carp/Suckers	13.9	2.9	3.8	---	0.6
Smelt	19.6	2.7	0.9	---	

Table 16-22. Information sources used by anglers.

Source	RESIDENTS Never	 Sometimes	 Often	NONRESIDENTS Never	 Sometimes	 Often
	------	percent	------	------	percent	------
Other Anglers	7.0	52.2	40.8	5.8	42.6	51.6
Michigan D.N.R	33.5	52.7	13.8	27.7	51.6	20.7
Newspapers	38.2	49.1	12.7	32.9	52.5	14.6
Magazines	51.2	40.4	8.4	38.4	43.6	18.0
Bait/Tackle Shop	23.9	51.9	24.2	16.9	50.9	32.2
Radio or TV	54.5	38.4	7.1	48.2	45.0	6.8

Table 16-23. Preferred catch and eating species of resident and nonresident anglers.

Species	RESIDENTS Catch	 Eating	NONRESIDENTS Catch	 Eating
Bass	21.6%	7.2%	23.4%	8.7%
Walleye	16.9	24.0	17.7	27.2
Yellow Perch	11.9	24.6	3.2	12.5
Panfish	9.8	14.2	6.8	13.0
Chinook Salmon	8.8	2.9	25.3	11.7
Pike/Musky	7.0	2.7	2.6	0.4
Brook Trout	4.3	4.1	1.4	2.1
Steelhead	4.1	1.2	5.8	1.8
Trout	2.7	3.7	3.0	3.2
Brown Trout	2.0	1.5	1.2	1.3
Rainbow Trout	1.7	1.6	1.1	3.2
Lake Trout	1.7	1.5	0.4	2.1
Coho Salmon	1.6	1.5	3.4	5.1
Catfish	1.1	1.7	0.7	0.8
Smelt	0.6	1.0	0.0	0.7
Carp/Suckers	0.1	0.0	0.0	0.0
Missing	4.1	6.6	4.0	6.2
Total	100.0%	100.0%	100.0%	100.0%

Table 16-24. Preferred mode and method of fishing by resident and nonresident anglers.

Mode/Method	Residents	Nonresidents
LOCATION		
Inland Lakes	46.2%	39.8%
Great Lakes	36.2	29.6
Streams/Rivers	17.6	30.6
MODE		
Private Boat	71.5%	69.4%
Shore or Wading	19.0	24.3
Ice Fiching	4.5	2.0
Pier or Dock	4.3	0.7
Charter Boat	0.7	3.6
METHOD		
Bait Fishing	37.6%	23.1%
Trolling	19.7	16.4
Spincasting	19.3	24.8
Casting	15.9	25.1
Fly Fishing	6.0	4.9
Spearing	0.6	0.2
Dipping	0.5	0.0
Snagging	0.4	5.5

Table 16-25. Importance resident anglers assigned various attributes when selecting a fishing site.

	IMPORTANCE RANKINGS					
Attributes	Not Important 0	Somewhat Important 1	Important 2	Very Important 3	Crucial 4	Mean
	percent					
Angler crowding	17.2	15.0	25.7	25.0	17.1	2.1
Competition from other recreation	25.6	14.9	21.7	23.1	14.7	1.9
Places to fish from shore	28.1	17.5	24.1	20.4	9.9	1.7
Boat launching	19.7	14.4	26.0	26.3	13.6	2.0
Marina facilities	43.3	19.1	19.9	13.3	4.4	1.2
Parking	19.6	17.1	29.9	22.2	11.2	1.9
Restaurants	66.6	18.5	9.2	4.4	1.3	0.6
Overnight accommodations	52.4	17.6	16.6	9.9	3.5	0.9
Natural beauty	12.8	16.3	29.8	25.0	16.1	2.2
Solitude	13.9	17.4	29.4	25.2	14.1	2.1
Water clarity	5.2	10.5	28.4	32.1	23.8	2.6
Contaminants	4.0	4.5	13.5	25.7	52.3	3.2
Catch rate of keepable fish	7.7	14.2	35.1	29.4	13.6	2.3
Catch rate of all fish	9.9	17.4	35.8	25.8	11.1	2.1
Favorite species	3.9	6.9	28.2	40.4	20.6	2.7
Size of fish	5.4	14.3	40.1	30.2	10.0	2.3
Diversity of fish species	11.2	19.8	40.2	22.8	6.0	1.9
Nearness to home	17.7	20.9	31.0	22.3	8.1	1.8
Information about fishing	19.3	21.5	31.1	20.3	7.8	1.8
Nearness 2nd home	54.6	15.0	16.9	10.5	3.0	0.9
Chance for trophy	31.8	21.8	22.0	16.0	8.4	1.5

Table 16-26. Importance nonresident anglers assigned various attributes when selecting a fishing site.

	IMPORTANCE RANKINGS					
Attributes	Not Important 0	Somewhat Important 1	Very Important 2	Important 3	Crucial 4	Mean
	percent					
Angler crowding	16.0	10.4	25.7	28.3	19.6	2.3
Competition from other recreation	25.1	13.1	23.0	25.2	13.6	1.9
Places to fish from shore	27.7	22.4	19.9	19.2	10.8	1.6
Boat launching	19.5	15.4	20.2	29.0	15.9	2.1
Marina facilities	39.3	21.8	20.7	13.8	4.4	1.2
Parking	13.3	20.6	27.9	26.0	12.2	2.0
Restaurants	43.0	24.7	20.0	10.4	1.9	1.0
Overnight accommodations	27.9	17.3	22.0	23.9	8.9	1.7
Natural beauty	12.4	10.8	28.3	32.9	15.6	2.3
Solitude	11.2	22.7	31.3	20.9	13.9	2.3
Water clarity	4.4	15.6	30.6	26.7	22.7	2.5
Contaminants	5.0	5.1	9.1	27.9	52.9	3.2
Catch rate of keepable fish	7.3	17.5	27.9	34.5	12.8	2.3
Catch rate of all fish	9.5	17.7	35.6	29.3	7.9	2.1
Favorite species	2.0	10.7	23.4	43.8	20.1	2.7
Size of fish	3.8	18.7	39.7	30.6	7.2	2.1
Diversity of fish species	9.4	20.6	42.8	22.8	4.4	1.9
Nearness to home	23.7	26.8	32.1	12.4	5.0	1.5
Information about fishing	12.0	18.2	36.0	24.4	9.4	2.0
Nearness 2nd home	51.9	11.2	23.4	10.9	2.6	1.0
Chance for trophy	29.3	15.9	25.8	19.5	9.5	1.6

Table 16-27. Importance resident anglers placed on various reasons for fishing.

Reason/Benefit	Not Important 0	Somewhat Important 1	Important 2	Very Important 3	Crucial 4	Mean
	percent					
Fish to eat	14.3	24.3	31.3	21.9	8.2	1.9
Relaxation	2.0	6.4	27.2	44.1	20.3	2.7
Companionship	19.5	19.3	30.6	24.5	6.1	1.8
Enjoy nature	2.2	7.7	27.5	41.4	21.2	2.7
Challenge/excitement	6.7	14.0	30.8	32.3	16.2	2.4
To be alone	39.6	22.2	19.3	12.8	6.1	1.2
To improve skill	31.7	24.0	25.1	14.4	4.8	1.4
To get away	12.3	12.8	26.4	32.1	16.4	2.3
Exercise	41.8	22.4	20.8	11.3	3.7	1.1
Family togetherness	25.5	16.9	27.1	22.0	8.6	1.7
Trophy fish	49.3	19.2	16.6	9.6	5.3	1.0
Sense of achievement	32.8	23.5	25.3	13.1	5.3	1.4

Table 16-28. Estimated per-day angler expenditures by species.

Species	Day Trip Expenditures		Overnight Trip Expenditures		Average Overnight Trip Length (Days)
	Total[1]	Local	Total	Local	
Yellow Perch	$36.00	$ 7.00	$219.00	$ 97.00	7.0
Bass	35.00	6.50	206.00	84.00	6.0
Panfish	25.50	4.00	198.00	93.00	6.0
Walleye	45.36	7.50	259.00	115.00	7.0
Chinook Salmon	50.50	12.00	258.00	130.00	5.0
Lake Trout	56.00	11.00	279.00	120.50	5.0
Steelhead	68.00	7.00	227.00	110.00	4.0
Brown Trout	50.00	5.50	195.00	98.00	4.0
Brook Trout	58.50	2.50	184.00	58.00	5.0
Rainbow Trout	45.00	3.20	220.50	92.00	5.0
Smelt	9.00	3.50	81.50	23.50	3.0

[1] At home, travel to and from, and locally.

Persons fishing for lake trout on overnight trips spent $279 per trip on trips lasting an average of 5 days. They spent an average of $120.50 per trip and $24 per day locally. Persons fishing for chinook salmon spent an average of $130 per trip ($26 per day) near the fishing site. They spent another $128 either at home in preparation for the trip or during travel to and from the fishing site.

Charter Fishing in Michigan

The introduction of salmon to the Great Lakes and the development of the Great Lakes open water fishery have resulted in the growth of numerous supporting businesses, such as boat dealers, tackle shops, and charter boat services. The growth of the latter has been especially dramatic. The number of licensed charter boats has increased over 500% from 150 in 1978 to 920 in 1985.

A recent study of Michigan's charter boat industry obtained comprehensive information on its size and characteristics (Mahoney, Brunke, and Pistis, 1986). During the summer of 1985, 83 captains located throughout the state distributed 10 questionnaires to a random sample of their charter parties. Fifty-four percent (448) of the questionnaires distributed were returned. Information was also obtained from the participating captains to estimate the total number of charters and the amount invested in their equipment.

Characteristics of Charter Boat Businesses

The average captain had been in business eight years. Approximately $31 million was invested statewide in charter boats and equipment. The average current (disposal) value of charter boats was about $28,000. Captains on the average had an additional $5,900 invested in fishing rods, baits, downriggers, fish-finding equipment, and radar.

The majority of captains were part-time operators. The average captain conducted 45 half-day charter trips and 20 full-day trips in 1985. The average fee was $200 for a half-day trip and $300 for a full-day trip. Since the average charter fishing party consisted of four persons, an estimated 239,000 people charter-fished in 1985. Charter customers paid approximately $13.8 million in charter fees. This figure does not include expenditures on travel, lodging, or meals.

Characteristics of Charter Boat Customers

Charter fishing appears to be a significant generator of tourism activity both for the state and coastal communities where charter boats are docked. Thirty percent (71,700) of the 239,000 persons that charter-fished in 1985 were nonresidents (Table 16-29). Eleven percent were from Ohio, 5% percent from Illinois, and 4% from Indiana. Sixty-five percent of the charter customers stated that charter fishing was the primary and only purpose for the trip on which they charter-fished; 18% stated that it was the primary but not sole purpose of the trip (Table 16-30). Eighty-six percent of the customers reserved a charter before leaving home.

Seventy-three percent of the customers charter-fished on trips that lasted more than one day (Table 16-31). The average trip involved two (2.2) overnight stays. Only 27% of the trips did not involve an overnight stay. The average travel party consisted of 4.6 persons (Table 16-32). Most of these persons charter-fished. The average charter party consisted of four persons (Table 16-33). Over half (57%) of the customers on overnight trips stayed in motels, 13% camped, 8% stayed with relatives or friends, 6% stayed in a second home or cottage, and

Table 16-29. Locations of permanent residences of Michigan charter boat customers.

Zip Code Zone		Percent of Customers
MICHIGAN		70.0
Royal Oak	(480)	21.7
Detroit	(481,482)	14.3
Flint	(484,485)	7.9
Saginaw	(486,487)	4.2
Lansing	(488,489)	6.9
Kalamazoo	(490,491)	4.6
Jackson	(492)	1.5
Grand Rapids	(493-495)	5.4
Traverse City	(496)	2.2
Gaylord	(497)	1.3
Upper Peninsula	(498,499)	0.0
OHIO		11.0
Columbus	(430-433)	2.4
Toledo	(434-436)	4.2
Cleveland	(440-441)	0.8
Cincinnati	(450-452)	1.4
Other		2.2
ILLINOIS		4.5
North Suburban	(600-603)	1.5
South Suburban	(604,605)	0.7
Chicago	(606)	1.0
Other		1.3
INDIANA		3.7
OTHER STATES		10.8

Table 16-30. Purpose of trips on which persons charter-fished.

Purpose	Percent
Charter fishing primary and only purpose	65.2
Charter fishing primary but not only purpose	18.2
Charter fishing not primary purpose but planned	14.2
Charter fishing not planned	2.4
Total	100.0

Table 16-31. Length of trips on which people charter-fished.

Number of Nights	Percent	Cumulative Percent
0	27.2	27.2
1	26.4	53.6
2	18.5	72.1
3	10.6	82.7
4	4.0	86.7
5	1.5	88.1
6	2.0	90.1
7	3.7	93.8
8	1.2	95.1
9	1.2	96.3
10 or more	3.7	100.0
Total	100.0	

Table 16-32. Number of persons in the travel party on trips on which persons charter-fished.

Number on trip	Percent
1	2.3
2	16.9
3	17.2
4	33.3
5	14.4
6	9.0
7	1.5
8+	5.4
Total	100.0

Mean = 4.6 persons

Table 16-33. Number of persons in the charter boat party.

Number	Percent
1	2.0
2	15.0
3	15.4
4	37.5
5	15.4
6+	14.7
Total	100.0

Mean = 4.0 persons

16% used some other type of lodging (e.g., lodge, Bed & Breakfast, condominium). Over a third (39%) of the customers had not charter-fished in Michigan prior to the trip on which they received a questionnaire (Table 16-34).

Customers had relatively high income and education levels: 42% had family incomes of $50,000 or more, compared to 9% of licensed anglers as a whole (Table 16-35), and 42% had college degrees (Table 16-36).

Table 16-34. Percentage of first time charter boat customers.

	Percent
First time charter fishing in Michigan	38.5
First time with the captain	18.5
Fished previously with the captain	43.0
Total	100.0

Table 16-35. Family incomes of charter boat customers.

Income	Percent	Cumulative Percent
Less than $10,000	1.9	1.9
$10,000-$14,999	1.7	3.6
$15,000-$19,999	3.4	7.0
$20,000-$24,999	6.7	13.7
$25,000-$29,999	8.0	21.7
$30,000-$34,999	11.1	32.8
$35,000-$39,999	8.7	41.5
$40,000-$44,999	7.2	48.7
$45,000-$49,999	7.0	55.7
$50,000-$54,999	9.1	64.8
$55,000-$59,999	4.3	69.1
$60,000 or more	30.9	100.0
Total	100.0	

Table 16-36. Education levels of charter boat customers.

Level	Percent	Cumulative Percent
Grade School	1.0	1.0
Some High School	3.1	4.1
High School	25.6	29.7
Some College	28.4	58.1
College Degree	24.3	82.4
Some Graduate School	2.4	84.8
Advanced Degree	15.2	100.0
Total	100.0	

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CHAPTER 17

GOLFING IN MICHIGAN

R. Sam Larson and Daniel M. Spotts

Introduction

Michigan has been increasingly promoted as a golfing vacation destination, particularly through the Michigan Travel Bureau's cooperative advertising programs. In the Bureau's 1989 cooperative advertising program $300,000 were allocated to the Northern Michigan Golf Council, $36,000 to the Michigan Association of Public Golf Courses, and $15,500 to Northeast Michigan Golf (Whisenhunt, 1989:29). These allocations amounted to 30% of the Bureau's 1989 cooperative advertising budget. The private sector has also been involved in promoting Michigan as a summer golf capital. For example, P.A.R. Golf, Inc. of Dearborn has been promoting and coordinating travel to Michigan specifically for golf vacations.

Because of the increasing attention given to the promotion of golfing in Michigan, it is useful to document the characteristics of those who golf in this state and trends in the supply of and demand for golf facilities in Michigan. This chapter provides this information, drawing primarily on statistics published by the National Golf Foundation (NGF). The latter provides the best available information on the characteristics of golfers and golf facilities both nationwide and in Michigan.

Number and Characteristics of Golfers

In January 1989 Market Facts, Inc. conducted a mail survey of its consumer panel for the NGF to determine the popularity of golfing and the characteristics of golfers in each state. A sample of 30,000 households was randomly drawn from the panel. Usable questionnaires were received from 76% of these households. Individuals at least 5 years of age who played at least once during the preceding 12 months (1988) were represented in the resulting participation rates. Responding households were weighted to conform to all U.S. households and participation rates were estimated to be accurate to within 0.2% with 95% confidence.

Golfing participation rates by state for 1988 are displayed in Table 17-1. Michigan's participation rate of 14% was the third highest in the U.S. and exceeded the national participation rate of 10%. Michigan's population included an estimated 1,279,734 golfers, more than any other state except California, New York, Texas, Illinois, or Ohio. It should be noted that the statistics in Table 17-1 only indicate a golfer's residence and do not indicate where he or she participated. Some golfers in a given state of course may leave that state to play, and some nonresidents may travel to that state to play.

The number of golfers in Michigan declined 2% between 1987 and 1988, while the number of golfers nationwide grew 8% during the same period (NGF, 1988; NGF, 1989a).

Of the estimated 1.3 million golfers in Michigan in 1988, 27% were female, compared to 22% nationwide. The average age of golfers in Michigan was 36.7, slightly below the national average of 38.1. Michigan's proportion of golfers over age 50, 24%, was similar to the national percentage of 25%. The average household income of golfers was $48,800 in Michigan and $45,000 nationwide. In 1988 the average number of rounds played by Michigan golfers was 17.7, compared to 20.8 nationwide (NGF, 1989a).

Table 17-1. Estimated number of golfers and golfing participation rates, by state, 1988.

Rank	State	Number of Golfers	Rank	State	Golfing Participation Rate
1	CA	2,364,909	1	MN	15.9
2	NY	1,660,393	1	WI	15.9
3	TX	1,560,940	2	IA	14.5
4	IL	1,485,815	2	UT	14.5
5	OH	1,359,875	3	ND	14.2
6	■ MI	1,279,734	3	■ MI	14.2
7	FL	1,171,635	4	WY	13.1
8	PA	897,000	4	IL	13.1
9	WI	748,207	5	OH	12.9
10	MN	664,005	5	KS	12.9
11	NJ	661,710	6	ID	12.3
12	IN	655,824	7	IN	12.1
13	MA	601,110	8	CO	12.0
14	NC	584,846	9	SD	11.8
15	WA	486,837	10	NM	11.5
16	VA	451,024	10	NV	11.5
17	GA	428,738	11	WA	11.0
18	MO	417,787	12	NE	10.9
19	IA	403,575	13	OR	10.7
20	CO	390,688	14	CT	10.6
21	MD	377,325	15	MA	10.5
22	CT	334,403	16	FL	9.9
23	KY	326,579	17	MT	9.8
24	AZ	324,753	18	AZ	9.7
25	KS	313,144	19	NY	9.5
26	TN	295,548	19	TX	9.5
27	SC	286,008	20	NC	9.3
28	OR	285,079	20	VT	9.3
29	OK	263,533	21	KY	8.9
30	LA	250,545	22	NJ	8.8
31	UT	241,578	23	CA	8.7
32	AL	213,332	23	NH	8.7
33	NE	171,462	24	SC	8.5
34	NM	170,629	24	MD	8.5
35	ID	123,728	24	ME	8.5
36	AR	117,725	25	MO	8.3
37	NV	114,875	26	DE	8.2
38	WV	107,288	27	OK	8.1
39	MS	104,151	28	VA	7.8
40	ME	98,561	29	PA	7.7
41	ND	95,922	30	RI	7.2
42	NH	89,733	31	GA	7.0
43	SD	82,879	32	TN	6.2
44	MT	79,339	33	WV	5.7
45	RI	69,351	33	LA	5.7
46	WY	63,778	34	AL	5.3
47	DE	51,259	35	AR	5.0
48	VT	49,793	36	MS	4.0
49	DC	23,044	37	DC	3.8
	US	23,400,000		US	10.4

SOURCE: National Golf Foundation. 1989. Golf Participation in the United States. 1989 edition. Jupiter, FL: National Golf Foundation. Reprinted with permission.

Golf Facilities

Definitions

The NGF annually publishes a geographic analysis of golf facilities in the U.S. (e.g., NGF, 1989b). In these reports a golf facility is defined as a club or complex which contains at least one nine hole course and may include different types of courses, such as regulation length and par-3 length courses. It may be a private facility which restricts its use to members, a daily fee facility which is privately owned but open to public play, or a municipal facility which is owned by a tax-supported agency such as a city, county, or state. A golf course is defined as a tract of land containing from nine to 18 separate golf holes. There are three types of golf courses: regulation-length, executive-length, and par-3. A regulation-length course is full-sized with a total length of over 5,200 yards for 18 holes and a par rating of 66 or more; an executive-length golf course is a compact version of the regulation-length course with a total length of 4,000 to 5,200 yards for 18 holes and a par rating of 58 to 66; and a par-3 course is a short course comprised solely of par-3 holes with a total length under 4,000 yards for 18 holes and a par rating of not more than 54 strokes. In this chapter "public" golf facilities, courses, or holes means the sum of daily fee and municipal facilities, courses, or holes.

A Nationwide Perspective

In 1988 Michigan had a total of 10,440 golf course holes, 8,073 of which were public golf course holes and 2,367 of which were private golf course holes (Table 17-2). Michigan ranked second in the nation behind Florida in terms of number of public golf course holes. However, Michigan led the nation in terms of the number of public golf facilities and the number of public golf courses (NGF, 1989b). Michigan ranked tenth in terms of number of private golf course holes, and sixth in terms of total number of holes (Table 17-2). The states with a higher number of total golf course holes in 1988 (Florida, California, New York, Texas, and Ohio) each had estimated populations in 1988 that were higher than that of Michigan (Table P-1).

An indication of the supply of golfing opportunities in each state which takes into consideration variations in the sizes of the populations of these states is provided in Table 17-3. This table portrays the number of persons per golf course hole in each state. The larger the population per hole (PPH) in a given state, the poorer the public's accessibility to golfing opportunities in that state. As shown in Table 17-3, in 1988 accessibility in terms of persons per total holes was better in Michigan, with 887 PPH, than in the nation as whole, with 1,243 PPH. Accessibility in terms of persons per public hole also was better in Michigan, with 1,147 PPH, than in the nation as a whole, with 2,092 PPH. Accessibility in terms of persons per private hole was worse in Michigan, with 3,913 PPH, than in the nation as a whole, with 3,064 PPH. In 1988 Michigan ranked sixth in the nation in terms of accessibility to public golf course holes, 39th in terms of accessibility to private golf course holes, and eleventh in terms of accessibility to golf course holes in general.

A Statewide Perspective

In 1989 Michigan had 660 golf facilities (Table 17-4). Of these, 67% were daily fee facilities, 21% were private facilities, and 12% were municipal facilities. Between 1986 and 1989 the number of daily fee facilities decreased by 5 and the number of private facilities decreased by 2, while the number of municipal facilities increased by 5.

Table 17-2. Number of golf course holes by state, 1988.

PUBLIC GOLF COURSE HOLES			PRIVATE GOLF COURSE HOLES			TOTAL GOLF COURSE HOLES		
Rank	State	Number	Rank	State	Number	Rank	State	Number
1	FL	8,343	1	FL	6,957	1	FL	15,300
2	■ MI	8,073	2	TX	5,823	2	CA	12,663
3	CA	7,515	3	CA	5,148	3	NY	11,295
4	OH	7,434	4	NY	4,194	4	TX	10,746
5	NY	7,101	5	PA	3,726	5	OH	10,521
6	PA	5,940	6	NC	3,357	6	■ MI	10,440
7	IL	5,364	7	OH	3,087	7	PA	9,666
8	TX	4,923	8	IL	3,051	8	IL	8,415
9	WI	4,347	9	GA	2,493	9	NC	7,416
10	NC	4,059	10	■ MI	2,367	10	WI	5,589
11	IN	3,852	11	VA	2,133	11	IN	5,427
12	MN	3,528	12	NJ	1,980	12	MA	4,851
13	MA	2,961	13	SC	1,944	13	MN	4,824
14	SC	2,538	14	IA	1,917	14	SC	4,482
15	AZ	2,196	15	MA	1,890	15	GA	4,212
16	WA	2,169	16	AL	1,818	16	NJ	4,122
17	NJ	2,142	17	IN	1,575	17	IA	4,014
18	IA	2,097	17	TN	1,575	18	VA	3,888
19	MO	1,872	18	MO	1,557	19	AZ	3,483
20	CO	1,755	19	KS	1,539	20	MO	3,429
20	VA	1,755	20	LA	1,476	21	TN	3,330
20	TN	1,755	21	MD	1,467	22	WA	3,078
21	GA	1,719	22	KY	1,341	23	AL	2,970
22	OR	1,458	23	CT	1,305	24	KS	2,799
23	KY	1,449	24	MN	1,296	25	KY	2,790
24	OK	1,395	25	AZ	1,287	26	CO	2,781
25	CT	1,278	26	MS	1,278	27	CT	2,583
26	KS	1,260	27	WI	1,242	28	MD	2,277
27	AL	1,152	28	AR	1,170	29	OK	2,259
28	ME	1,089	29	CO	1,026	30	LA	2,124
29	NE	1,044	30	WA	909	31	OR	1,989
30	NH	945	31	NE	864	32	AR	1,935
31	WV	873	31	OK	864	33	MS	1,926
32	UT	855	32	WV	567	34	NE	1,908
33	MD	810	33	OR	531	35	WV	1,440
34	ID	774	34	SD	477	36	ME	1,314
34	HI	774	35	NM	414	37	UT	1,197
35	AR	765	36	ND	369	38	NH	1,170
36	ND	711	37	RI	342	39	SD	1,080
37	LA	648	37	UT	342	39	ND	1,080
37	MS	648	38	MT	333	40	HI	1,053
38	NM	621	39	DE	288	41	NM	1,035
39	SD	603	40	HI	279	41	ID	1,035
39	VT	603	41	ID	261	42	MT	936
39	MT	603	42	ME	225	43	VT	765
40	NV	594	42	NH	225	44	RI	702
41	WY	423	43	WY	171	45	NV	675
42	RI	360	44	VT	162	46	WY	594
43	DE	108	45	NV	81	47	DE	396
44	AK	81	46	DC	54	48	AK	108
45	DC	54	47	AK	27	48	DC	108
	US	115,416		US	78,804		US	194,220

SOURCE: National Golf Foundation. 1989. Golf Facilities in the United States. 1989 edition. Jupiter, FL: National Golf Foundation. Reprinted with permission.

Table 17-3. Golfing accessibility by state, 1988.

PUBLIC GOLF HOLES			PRIVATE GOLF HOLES			TOTAL GOLF HOLES		
Rank	State	PPH	Rank	State	PPH	Rank	State	PPH
1	VT	913	1	IA	1,492	1	ND	643
2	ND	977	2	SD	1,513	2	SD	668
3	ME	1,094	3	KS	1,621	3	IA	713
4	WI	1,113	4	FL	1,748	4	VT	719
5	NH	1,122	5	SC	1,779	5	SC	772
6	■ MI	1,147	6	NE	1,871	6	FL	795
7	WY	1,183	7	ND	1,882	7	WY	842
8	SD	1,197	8	NC	1,925	8	NE	847
9	MN	1,217	9	AR	2,068	9	WI	865
10	ID	1,336	10	MS	2,094	10	NC	872
11	SC	1,363	11	DE	2,231	11	■ MI	887
12	IA	1,364	12	AL	2,276	12	MT	889
13	MT	1,380	13	CT	2,485	13	MN	890
14	HI	1,407	14	MT	2,499	14	KS	891
15	IN	1,446	15	GA	2,525	15	NH	906
16	OH	1,457	16	AZ	2,674	16	ME	907
17	FL	1,458	17	VA	2,786	17	AZ	988
18	NE	1,549	18	KY	2,812	18	ID	999
19	AZ	1,567	19	RI	2,895	19	IN	1,026
20	NC	1,592	20	TX	2,900	20	OH	1,030
21	NV	1,728	21	WY	2,926	21	HI	1,034
22	OR	1,878	22	LA	3,061	22	CO	1,203
23	CO	1,907	23	MD	3,110	23	MA	1,213
24	KS	1,980	24	TN	3,111	24	PA	1,239
25	MA	1,987	25	MA	3,113	25	AR	1,251
26	UT	2,003	26	PA	3,213	26	CT	1,255
27	PA	2,016	27	CO	3,262	27	WV	1,343
28	WA	2,097	28	MN	3,312	28	KY	1,352
29	IL	2,173	29	MO	3,323	29	OR	1,377
30	WV	2,216	30	VT	3,397	30	IL	1,385
31	OK	2,397	31	WV	3,412	31	MS	1,390
32	NM	2,456	32	OH	3,510	32	AL	1,393
33	NY	2,530	33	IN	3,537	33	RI	1,410
34	CT	2,537	34	NM	3,684	34	UT	1,431
35	KY	2,603	35	IL	3,821	35	TN	1,471
36	RI	2,750	36	OK	3,870	36	NM	1,473
37	MO	2,764	37	WI	3,894	37	WA	1,478
38	TN	2,792	38	HI	3,903	38	OK	1,480
39	AR	3,163	38	NJ	3,903	39	GA	1,495
40	VA	3,386	39	■ MI	3,913	40	MO	1,509
41	TX	3,430	40	ID	3,961	41	NV	1,521
42	AL	3,591	41	NY	4,283	42	VA	1,529
43	NJ	3,608	42	NH	4,712	43	TX	1,572
44	GA	3,662	43	WA	5,004	44	NY	1,590
45	CA	3,718	44	UT	5,007	45	DE	1,622
46	MS	4,130	45	OR	5,157	46	NJ	1,875
47	MD	5,633	46	ME	5,297	47	MD	2,004
48	DE	5,949	47	CA	5,427	48	LA	2,127
49	AK	6,737	48	DC	11,543	49	CA	2,206
50	LA	6,972	49	NV	12,675	50	AK	5,053
51	DC	11,543	50	AK	20,211	51	DC	5,771
	US	2,092		US	3,064		US	1,243

NOTE: PPH denotes population per hole, a measure of golfing accessibility. The larger the PPH, the poorer the accessibility.

SOURCE: Derived from information in National Golf Foundation. 1989. Golf Facilities in the United States. 1989 edition. Jupiter, FL: National Golf Foundation. Used with permission.

Table 17-4. Statewide golfing supply in Michigan, 1986-1989.

UNIT OF SUPPLY	1986	1987	1988	1989
GOLF FACILITIES				
Daily Fee	448	443	440	443
Municipal	74	73	76	79
Private	140	138	138	138
Total	662	654	654	660
9-HOLE FACILITIES				
Daily Fee	N.A.	187	179	170
Municipal	N.A.	28	31	30
Private	N.A.	28	24	24
Total	N.A.	243	234	224
18-HOLE FACILITIES				
Daily Fee	N.A.	N.A.	222	234
Municipal	N.A.	N.A.	36	42
Private	N.A.	N.A.	106	105
Total	N.A.	N.A.	364	381
27-HOLE AND LARGER FACILITIES				
Daily Fee	N.A.	N.A.	39	39
Municipal	N.A.	N.A.	9	7
Private	N.A.	N.A.	8	9
Total	N.A.	N.A.	56	55
EXECUTIVE FACILITIES (100% EXECUTIVE)	30	30	32	32
PAR-3 FACILITIES (100% PAR-3)	29	28	25	24
FACILITIES WITH SOME EXECUTIVE HOLES	11	41	41	41
FACILITIES WITH SOME PAR-3 HOLES	8	36	32	31
GOLF COURSES				
Daily Fee	N.A.	N.A.	489	493
Municipal	N.A.	N.A.	86	87
Private	N.A.	N.A.	146	147
Total	N.A.	N.A.	721	727
GOLF HOLES				
Daily Fee	7,992	6,786	6,885	7,038
Municipal		1,206	1,188	1,233
Private	2,313	2,304	2,367	2,385
Total	10,305	10,296	10,440	10,656

SOURCE: National Golf Foundation. Golf Facilities in the United States, annual. Jupiter, FL: National Golf Foundation. Reprinted with permission.

The majority (58%) of facilities in Michigan in 1989 were 18-hole facilities. The total number of 18-hole facilities increased from 364 in 1988 to 381 in 1989. Most of this growth occurred in daily-fee facilities. Municipal 18-hole facilities increased from 36 in 1988 to 42 in 1989. Private 18-hole facilities decreased from 106 in 1988 to 105 in 1989.

In 1989 about a third of all golf facilities in Michigan were 9-hole facilities. The number of 9-hole facilities dropped from 243 in 1987 to 224 in 1989. A decline in the number of daily fee 9-hole facilities accounts for most of this decrease.

In 1989 Michigan also had 55 facilities with 27 holes or more. Seventy-one percent of these were daily fee facilities, 16% were private facilities, and 13% were municipal facilities.

Of the 660 golf facilities, 32 were 100% executive facilities, 24 were 100% par-3 facilities, 41 were facilities with some executive holes, and 31 were facilities with some par-3 holes. The number of facilities with some executive holes more than tripled from 1986 to 1989, from 11 to 41. Facilities with some par-3 holes also more than tripled, from 8 in 1986 to 31 in 1989. Par-3 facilities (100% par-3) declined from 29 in 1986 to 24 in 1989.

In 1989 Michigan had a total of 727 golf courses and 10,656 golf course holes. Sixty-eight percent of the golf courses were daily fee courses, 20% were private courses, and 12% were municipal courses. The distribution of golf course holes was similar: 66% were daily fee holes, 22% were private holes, and 12% were municipal holes. This distribution of holes has remained relatively constant since 1987.

Golfing Supply in Michigan Counties and Metropolitan Areas

Of Michigan's 83 counties, 38 had a positive increase in the number of public holes, 41 did not change, and 4 experienced negative growth (Table 17-5). Those counties with the greatest positive net change were Macomb, with an increase of 72 public holes, Otsego with an increase of 63, and Chippewa and Lapeer with increases of 45 each. Iosco county had a decrease of 18 holes, and Arenac, Monroe, and Van Buren counties each lost 9 holes.

Golfing supply and accessibility in eleven metropolitan areas in Michigan in 1989 are presented in Table 17-6. Of the eleven metropolitan areas, Detroit had the highest total number of golf holes (3,141) and Muskegon the lowest (207). Accessibility in terms of population per total holes was best in Jackson, with only 481 PPH, and worst in Detroit, with 1,391 PPH. Accessibility in terms of population per public hole was also best in Jackson and worst in Detroit. Accessibility in terms of population per private hole was best in the Battle Creek area and worst in the Lansing/East Lansing area. Accessibility to public courses was much better than accessibility to private courses in all eleven metropolitan areas.

Concluding Remarks

While it is useful to document the quantitative aspects of the supply of golfing opportunities in Michigan, this only tells part of the story. The qualitative aspects of golfing opportunities are also extremely important, although obviously much more difficult to document. Nevertheless, one indication of the quality of golfing opportunities in Michigan is provided by the fact that in this state a golfer can play courses designed by some of the world's foremost golf course architects, including Jack Nicklaus, Arnold Palmer, Bill Newcomb, and Robert Trent Jones. In addition, the quality of some of Michigan's golf courses has been recognized by *Golf Digest* magazine, which considered Timber Ridge Golf Course in East Lansing to be among the "best new courses" of 1990 (Whitten, 1990).

Golfing at Grand Traverse Resort in Michigan's northern Lower Peninsula.

Table 17-5. Inventory of public golf facilities by Michigan county, 1985 and 1989.

	1985				1989				Total No. Public Holes, 1989 vs. 1985	
County	No. Public Facilities	No. Public 18-hole Courses	No. Public 9-hole Courses	Total No. Public Holes	No. Public Facilities	No. Public 18-hole Courses	No. Public 9-hole Courses	Total No. Public Holes	Net Change	Percent Change
Alcona	2	0	2	18	2	0	2	18	0	0.0
Alger	1	0	1	9	1	0	1	9	0	0.0
Allegan	11	8	3	171	12	9	4	198	27	15.8
Alpena	1	0	1	9	1	1	0	18	9	100.0
Antrim	8	4	4	108	8	6	3	135	27	25.0
Arenac	2	1	1	27	2	0	2	18	-9	-33.3
Baraga	1	0	1	9	1	0	1	9	0	0.0
Barry	6	3	3	81	6	4	5	117	36	44.4
Bay	6	5	1	99	6	5	1	99	0	0.0
Benzie	4	2	2	54	4	3	1	63	9	16.7
Berrien	12	8	4	180	11	8	4	180	0	0.0
Branch	3	0	3	27	3	0	3	27	0	0.0
Calhoun	9	7	2	144	9	8	1	153	9	6.2
Cass	5	1	4	54	6	2	4	72	18	33.3
Charlevoix	6	4	4	108	6	4	4	108	0	0.0
Cheboygan	3	1	2	36	3	2	1	45	9	25.0
Chippewa	3	0	3	27	5	3	2	72	45	166.7
Clare	1	0	1	9	3	0	3	27	18	200.0
Clinton	5	2	3	63	5	2	3	63	0	0.0
Crawford	1	0	1	9	2	1	1	27	18	200.0
Delta	3	2	1	45	4	2	2	54	9	20.0
Dickinson	3	2	1	45	3	2	1	45	0	0.0
Eaton	6	2	4	72	7	3	4	90	18	25.0
Emmet	3	3	1	63	3	3	3	81	18	28.6
Genesee	16	10	7	243	16	10	7	243	0	0.0
Gladwin	2	2	0	36	2	2	0	36	0	0.0
Gogebic	2	0	2	18	2	0	2	18	0	0.0
Gr. Traverse	5	3	3	81	6	4	3	99	18	22.2
Gratiot	4	1	3	45	4	1	3	45	0	0.0
Hillsdale	4	0	4	36	4	0	4	36	0	0.0
Houghton	3	1	2	36	3	1	2	36	0	0.0
Huron	4	2	2	54	6	3	3	81	27	50.0
Ingham	18	10	9	261	19	11	9	279	18	6.9
Ionia	4	3	1	63	4	3	1	63	0	0.0
Iosco	4	3	1	63	3	2	1	45	-18	-28.6
Iron	2	1	1	27	2	1	1	27	0	0.0
Isabella	5	4	3	99	5	4	3	99	0	0.0
Jackson	18	9	10	252	17	10	8	252	0	0.0
Kalamazoo	13	10	5	225	13	10	7	243	18	8.0
Kalkaska	1	0	1	9	1	1	0	18	9	100.0
Kent	23	23	5	459	23	23	5	459	0	0.0
Keweenaw	1	0	1	9	1	0	1	9	0	0.0

Lake	1	0	1	9	1	1	0	18	9	100.0
Lapeer	5	2	3	63	7	5	2	108	45	71.4
Leelanau	2	1	1	27	2	1	1	27	0	0.0
Lenawee	8	4	4	108	8	4	4	108	0	0.0
Livingston	10	9	2	180	10	9	3	189	9	5.0
Luce	1	0	1	9	1	0	1	9	0	0.0
Mackinac	4	0	4	36	4	0	4	36	0	0.0
Macomb	24	20	12	468	25	23	14	540	72	15.4
Manistee	4	2	2	54	4	2	2	54	0	0.0
Marquette	2	2	0	36	2	2	0	36	0	0.0
Mason	2	2	0	36	2	2	0	36	0	0.0
Mecosta	2	2	0	36	2	2	0	36	0	0.0
Menominee	0	0	0	0	0	0	0	0	0	---
Midland	2	2	2	54	2	2	2	54	0	0.0
Missaukee	1	1	0	18	1	1	0	18	0	0.0
Monroe	13	11	5	243	12	11	4	234	-9	-3.7
Montcalm	5	0	6	54	6	0	7	63	9	16.7
Montmorency	2	2	1	45	3	4	1	81	36	80.0
Muskegon	10	6	6	162	11	8	5	189	27	16.7
Newaygo	3	2	1	45	4	3	1	63	18	40.0
Oakland	40	22	26	630	41	25	22	648	18	2.9
Oceana	2	2	0	36	2	2	0	36	0	0.0
Ogemaw	2	1	1	27	3	1	2	36	9	33.3
Ontonagon	2	0	2	18	2	0	2	18	0	0.0
Osceola	1	0	1	9	1	1	0	18	9	100.0
Oscoda	1	0	1	9	1	0	1	9	0	0.0
Otsego	4	4	0	72	6	7	1	135	63	87.5
Ottawa	9	7	3	153	10	7	5	171	18	11.8
Presque Isle	1	0	1	9	1	0	1	9	0	0.0
Roscommon	5	2	3	63	5	2	3	63	0	0.0
Saginaw	10	6	6	162	11	7	6	180	18	11.1
Saint Clair	9	4	5	117	9	4	5	117	0	0.0
Saint Joseph	4	5	0	90	4	5	0	90	0	0.0
Sanilac	5	1	4	54	5	2	3	63	9	16.7
Schoolcraft	1	0	1	9	1	0	1	9	0	0.0
Shiawassee	6	2	4	72	6	2	4	72	0	0.0
Tuscola	6	1	5	63	7	2	5	81	18	28.6
Van Buren	5	2	3	63	4	2	2	54	-9	-14.3
Washtenaw	13	8	7	207	14	10	7	243	36	17.4
Wayne	31	25	10	540	31	24	13	549	9	1.7
Wexford	3	2	2	54	4	2	3	63	9	16.7
Statewide	495	299	249	7,623	519	339	253	8,379	756	9.9

SOURCE: Derived from information presented in Rasmussen, Roy and Betty Rasmussen (eds.). 1986 Michigan Golfers Map & Guide and 1990 Michigan Golfers Map & Guide. Detroit, MI: RSG Publishing, Inc.

Table 17-6. Golfing supply and accessibility in metropolitan areas in Michigan, 1989.

Metropolitan Statistical Area	Population	PUBLIC GOLF HOLES		PRIVATE GOLF HOLES		TOTAL GOLF HOLES	
		Holes	PPH	Holes	PPH	Holes	PPH
Ann Arbor	273,338	243	1,125	117	2,336	360	759
Battle Creek	136,286	162	841	90	1,514	252	541
Benton Harbor	164,948	189	873	81	2,036	270	611
Detroit	4,369,950	2,331	1,875	810	5,395	3,141	1,391
Flint	432,725	261	1,658	180	2,404	441	981
Grand Rapids	668,129	648	1,031	252	2,651	900	742
Jackson	147,184	261	564	45	3,271	306	481
Kalamazoo	217,775	225	968	81	2,689	306	712
Lansing/E. Lansing	431,015	414	1,041	45	9,578	459	939
Muskegon	157,664	135	1,168	72	2,190	207	762
Saginaw/Bay City/ Midland	405,262	360	1,126	99	4,094	459	883

NOTE: PPH denotes population per hole, a measure of golfing accessibility. The larger the PPH, the poorer the accessibility.

SOURCE: National Golf Foundation. 1990. Golf Facilities in the United States. 1990 edition. Jupiter, FL: National Golf Foundation. Reprinted with permission.

Moreover, Indian Golf and Country Club in Lake Orion and Michaywe Hills Golf Course in Gaylord were considered by *Golf Digest* to be among the "best new courses" of 1989 (Whitten, 1989a). Finally, a recent ranking of "America's 100 Greatest Golf Courses" by *Golf Digest* included courses found at four Michigan facilities: Crystal Downs Country Club in Frankfort, Oakland Hills Country Club in Birmingham, Point O'Woods Golf and Country Club in Benton Harbor, and Country Club of Detroit in Grosse Pointe Farms (Whitten, 1989b).

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CHAPTER 18

OFF-ROAD VEHICLE RIDING IN MICHIGAN

Charles M. Nelson

Introduction

The number and character of off-road vehicles (ORVs) registered in Michigan have changed markedly since registration was first required in 1976. At that time 26,419 ORVs were registered, and 72% of these vehicles were two-wheel motorcycles, with four-wheel drive trucks and dune buggies comprising most of the remainder (Alexander and Jamsen, 1977). In 1989, 155,769 ORVs were registered (a 490% increase), and less than 25% of these vehicles were two-wheel motorcycles.

The growth in the number of ORVs has been attended by increases in the environmental, social, and economic impacts associated with their use. These impacts result from the fact that the use of ORVs requires an extensive land area, produces noise and sometimes long-standing alterations of the landscape, and is attended by sometimes significant user expenditures in nearby communities.

Because of the increased number of ORVs, the changes that have occurred in the types of vehicles currently registered, and the important (and frequently controversial) impacts of ORV use, current and accurate information on ORV riding in Michigan is necessary for both the intelligent marketing and wise management of this activity. To provide this information the MDNR Forest Management Division in 1988 contracted with the MSU Department of Park and Recreation Resources to conduct a mail survey of ORV registrants which would determine the characteristics, expenditures, participation patterns, and management preferences of Michigan ORV users, the amount of ORV use occurring in the state, and the amount of gasoline consumed by ORVs in off-road settings in Michigan. Most of the resulting report (Nelson, 1989) is summarized in this chapter. Recommendations made to the MDNR based on the results of the survey may be found in Nelson (1989).

Survey Methods and Limitations

Since accurate information was desired on the registrants of each of the quite diverse types of ORVs registered in Michigan, it was necessary to stratify the overall population of vehicle registrations by type of vehicle. Early 1988 estimates by the Michigan Department of State suggested that about a quarter of the registrations were of two wheel cycles, a quarter were of three-wheelers, and about half were of four-wheel all terrain vehicles (ATVs) and four-wheel drive trucks and sport vehicles (hereinafter "four-wheel trucks"). Accordingly, a simple random sample of 300 two-wheel registrations, 300 three-wheel registrations, and 600 four-wheel registrations was drawn from a list of the 113,513 registrations that were valid on July 18, 1988. A small number of additional registrations in each vehicle category were randomly selected to replace names and addresses that were found to be incorrect after the first mailing. The final designated sample consisted of 293 two-wheel registrations, 294 three-wheel registrations, and 599 four-wheel registrations. Since the two types of four-wheel vehicles were indistinguishable on registration forms, a filter question early in the mail questionnaire was used to distinguish between those that were four-wheel ATV versus four-wheel truck registrations.

The questionnaire was sent to the designated sample in the fall of 1988. A total of 905 completed questionnaires were returned prior to the February 1, 1989 cutoff date, resulting in an overall response rate of 76%. The response rate was 78% for two-wheel registrants, 80% for three-wheel registrants, and 73% for four-wheel registrants. Because of the relatively high overall response rate, the achieved sample can be considered adequately representative of the population of registered ORV owners. However, this population of course does not include residents who fail to register their ORVs or nonresidents who ride ORVs in Michigan. Therefore the results discussed below should not be construed as representative of all individuals who ride ORVs in Michigan or of all ORV use in Michigan.

Respondents who had sold their vehicle, had not used it in the past 12 months, or provided useless responses were excluded from the analysis. There were 17 such respondents among the two-wheel registrants, 12 among the three-wheel registrants, and 44 among the four-wheel registrants.

The data were weighted to correct for multiple ORV ownership in the same vehicle category. For example, if a respondent reported ownership of 3 two-wheelers, this individual's responses were weighted by a factor of 1/3, since he/she was three times more likely to have been selected in the two-wheeler subsample than a respondent who had only 1 two-wheeler. Respondents who owned more than one vehicle in a category were instructed to respond with respect to the vehicle they most often rode.

Results are presented below by type of vehicle registered. The MDNR districts referred to in some tables are shown in Figure 18-1.

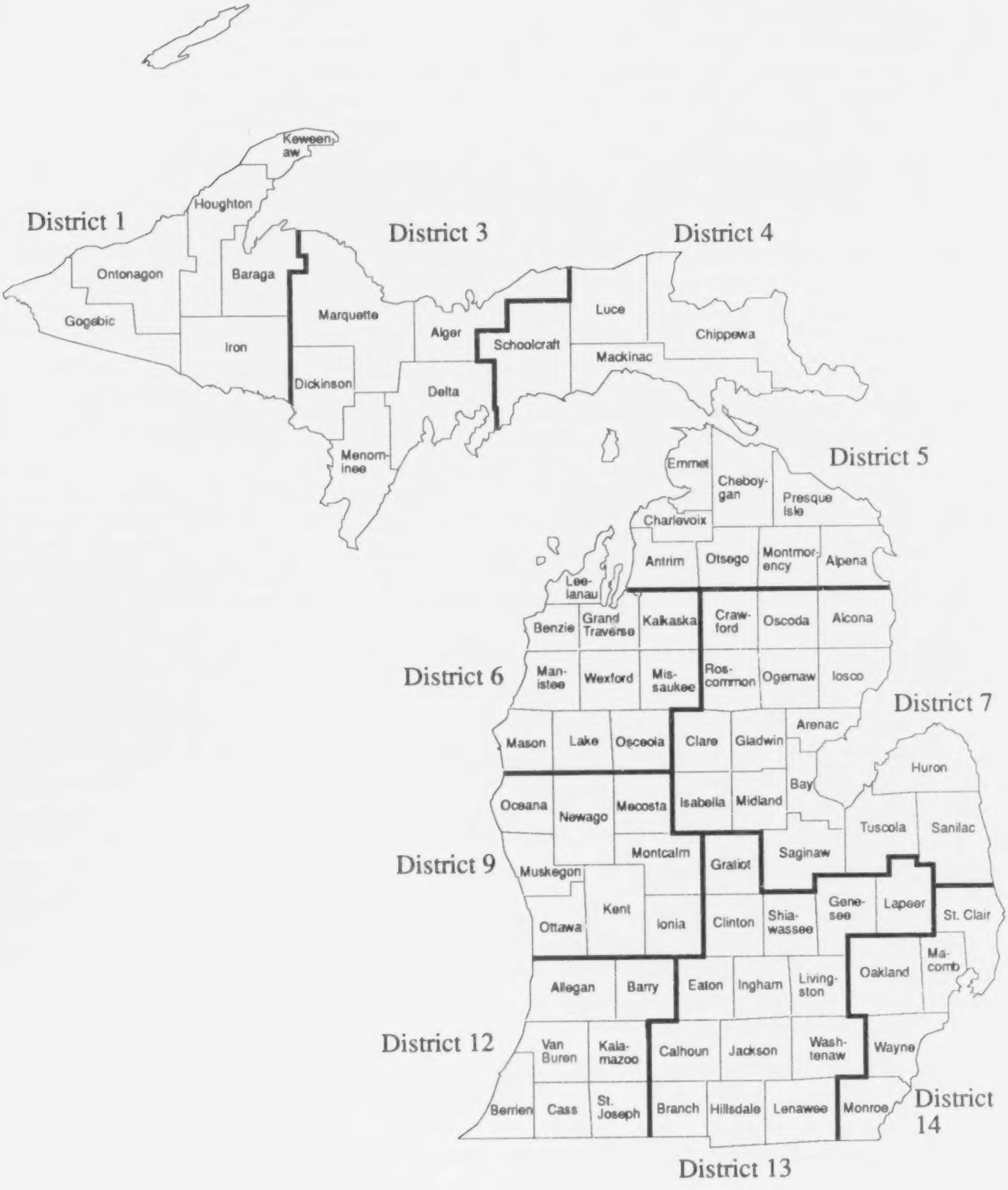
Results

Characteristics of Respondents

Over 87% of the registrants in a given vehicle group were male (Table 18-1). The average age of respondents was lowest for two-wheel registrants (32 years) and highest for three-wheel registrants (39 years). In terms of education, over 88% of the respondents in each vehicle group had at least a high school diploma. Median income levels were highest among four-wheel ATV registrants. All four groups had estimated median income levels higher than the state median household income level adapted from Verway (1987).

Respondents were more likely to reside in the northern two thirds of Michigan than the Michigan population in general (Verway, 1987) (Table 18-2). This tendency was most evident with three-wheel registrants and least evident with two-wheel registrants.

Relatively few respondents reported membership in selected organizations with a stated interest in ORV riding (Table 18-3). Two-wheel registrants were most likely to be members of the major ORV organizations (the American Motorcycle Association and the Cycle Conservation Club). In contrast, three-wheel, four-wheel ATV, and four-wheel truck registrants were most likely to belong to Michigan United Conservation Clubs (the National Wildlife Federation affiliate for Michigan), although the focus of this organization is only peripherally on ORVs. None of the two-wheel registrants and very few of the three and four-wheel registrants belonged to the Michigan Sport Buggy Association or the American All Terrain Vehicle Association--smaller organizations oriented to three and four-wheel vehicles.



District 1
District 3
District 4
District 5
District 6
District 7
District 9
District 12
District 13
District 14
Keweenaw
Houghton
Ontonagon
Baraga
Gogebic
Iron
Marquette
Dickinson
Menominee
Alger
Delta
Schoolcraft
Luce
Mackinac
Chippewa
Emmet
Cheboygan
Presque Isle
Charlevoix
Antrim
Otsego
Montmorency
Alpena
Leelanau
Benzie
Grand Traverse
Kalkaska
Crawford
Oscoda
Alcona
Manistee
Wexford
Missaukee
Roscommon
Ogemaw
Iosco
Mason
Lake
Osceola
Clare
Gladwin
Arenac
Huron
Bay
Oceana
Newago
Mecosta
Isabella
Midland
Tuscola
Sanilac
Muskegon
Montcalm
Gratiot
Saginaw
Ottawa
Kent
Ionia
Clinton
Shiawassee
Genesee
Lapeer
St. Clair
Allegan
Barry
Eaton
Ingham
Livingston
Oakland
Macomb
Van Buren
Kalamazoo
Calhoun
Jackson
Washtenaw
Wayne
Berrien
Cass
St. Joseph
Branch
Hillsdale
Lenawee
Monroe

Note: These are the current MDNR districts. The districts shown in Figures 19-1 and 21-1 are no longer in use.

Figure 18-1. MDNR districts used in ORV study.

Table 18-1. Demographic and socioeconomic characteristics of ORV registrants.

	TYPE OF VEHICLE REGISTERED			
	2-Wheel	3-Wheel	4-Wheel ATV	4-Wheel Truck
Percentage male	96	88	92	94
Mean age	32.3	38.8	36.3	34.4
Mean years of education	13.2	12.7	12.8	13.2
1987 household income				
Less than $10,000	3%	4%	1%	4%
$10,000-$19,999	11	12	7	11
$20,000-$29,999	26	20	18	28
$30,000-$39,999	20*	14*	22	20*
$40,000-$49,999	15	20	21*	17
$50,000-$59,999	10	11	11	9
$60,000 or more	16	18	21	13
Total	100%	100%	100%	100%

NOTE: Details may not add to totals due to rounding error.

*Median income level.

Table 18-2. Locations of permanent residences of respondents to ORV survey, by MDNR district.

MDNR District	TYPE OF VEHICLE REGISTERED 2-Wheel	3-Wheel	4-Wheel ATV	4-Wheel Truck
	percent			
1	2	4	1	1
3	3	13	7	1
4	1	4	2	0
5	4	2	4	2
6	4	3	5	6
7	12	21	13	14
9	9	8	10	20
12	7	6	6	4
13	24	15	20	28
14	33	24	32	24

Table 18-3. ORV registrants' membership in ORV-related organizations.

Organization	TYPE OF VEHICLE REGISTERED 2-Wheel	3-Wheel	4-Wheel ATV	4-Wheel Truck
	percentage members			
American Motorcycle Association	13	1	5	6
Cycle Conservation Club	7	1	2	2
Michigan United Conservation Clubs	9	8	11	10
American All Terrain Vehicle Association	0	1	2	2
Michigan Sport Buggy Association	0	0	0	5
Local ORV organization	8	2	5	4

Adoption of ORV Riding

Over 60% of the two-wheel registrants first rode an ORV before their sixteenth birthday, whereas only a quarter of the three-wheel registrants had participated by that age (Table 18-4). Two-wheel, four-wheel ATV, and four-wheel truck registrants were most likely to have first ridden two-wheelers (Table 18-5). Only three-wheel registrants, who generally started riding later in life, were most likely to have first ridden a three-wheeler rather than a two-wheeler.

Two-wheel and four-wheel truck registrants were most likely to have first owned a two-wheeler (Table 18-6). Three-wheel and four-wheel ATV registrants were most likely to have first owned the same type of vehicle they had registered.

ORV Ownership Patterns

The average number of vehicles owned by respondents in a given group is shown in Table 18-7. In parentheses are the percentages that owned multiple vehicles of the type for which they were sampled. Thirty-one percent of the two-wheel registrants owned more than one two-wheeler, 23% of the three-wheel registrants owned more than one three-wheeler, 20% of the four-wheel ATV registrants owned more than one four-wheel ATV, and 11% of the four-wheel truck registrants owned more than one four-wheel truck. This decline in percentages might be attributable to the increasing cost of vehicles as one moves from one registration category to the next.

Many respondents planned to purchase or sell an ORV in the next 12 months. Two-wheel registrants were the most likely, and three-wheel registrants the least likely, to have planned such a transaction. In each vehicle group respondents were more likely to have planned to purchase four-wheel ATVs than to sell them (Table 18-8). Conversely, in each group a higher percentage of respondents planned to sell three-wheelers than to purchase them, perhaps reflecting concerns about the safety of three-wheel vehicles and/or the cost of parts for these discontinued vehicles.

Participation in Other Recreation Activities

Many respondents used their ORV for activities other than trail riding (Table 18-9). While the latter was by far the most common use, a portion of each vehicle group did no trail riding with the ORV in the past 12 months, yet used the vehicle in off-road situations. Hunting was generally the most common off-road use other than trail riding. All vehicle types were commonly used in conjunction with camping. Ice use was common among all vehicle groups except two-wheel registrants.

Respondents were more likely than the general Michigan population to have participated in hunting, fishing, or snowmobiling, based on comparing their participation rates in these activities with the percentage of the Michigan population that purchased a hunting or fishing license or registered a snowmobile (Table 18-10).

Aggregate Riding Activity

In an earlier study of ORV use (Alexander and Jamsen, 1977), a user-day was defined as the use of a registered ORV by the *registrant* for any portion of a day. In the present study a user-day was defined as the use of a registered ORV by *anyone* for any portion of a

Table 18-4. Average age at which ORV registrants adopted ORV riding.

	TYPE OF VEHICLE REGISTERED			
	2-Wheel	3-Wheel	4-Wheel ATV	4-Wheel Truck
Mean age first rode ORV	17.2	27.4	25.4	18.4
Percentage under 16 on first ride	61	27	34	46

Table 18-5. Type of ORV first ridden by ORV registrants.

ORV First Ridden	TYPE OF VEHICLE REGISTERED 2-Wheel	3-Wheel	4-Wheel ATV	4-Wheel Truck
	----------percent----------			
2-wheel	92	42	49	58
3-wheel	4	48	19	6
4-wheel ATV	1	3	25	3
4-wheel truck	3	8	6	34
Total	100	100	100	100

NOTE: Details may not add to totals due to rounding error.

Table 18-6. Type of ORV first owned by ORV registrants.

ORV First Owned	TYPE OF VEHICLE REGISTERED 2-Wheel	3-Wheel	4-Wheel ATV	4-Wheel Truck
	----------percent----------			
2-wheel	88	33	39	54
3-wheel	4	56	10	3
4-wheel ATV	1	2	40	2
4-wheel truck	6	10	10	41
Total	100	100	100	100

NOTE: Details may not add to totals due to rounding error.

Table 18-7. Mean number of ORVs currently owned by ORV registrants.

Type of Vehicle Owned	TYPE OF VEHICLE REGISTERED				
	2-Wheel	3-Wheel	4-Wheel ATV	4-Wheel Truck	Total
2-wheel	1.5 (31)*	0.2	0.2	0.2	2.1
3-wheel	0.3	1.3 (23)*	0.2	0.3	2.1
4-wheel ATV	0.3	0.1	1.2 (20)*	0.3	1.9
4-wheel truck	0.4	0.2	0.1	1.1 (11)*	1.8

*Percentage that owned more than 1 vehicle type.

Table 18-8. ORV registrants' plans to buy or sell ORVs during the next 12 months.

	TYPE OF VEHICLE REGISTERED			
	2-Wheel	3-Wheel	4-Wheel ATV	4-Wheel Truck
	----------planning to buy or sell------------			
Buy 2-wheel	12	2	1	2
Sell 2-wheel	21	1	2	3
Buy 3-wheel	0	1	0	0
Sell 3-wheel	2	8	1	1
Buy 4-wheel ATV	10	5	11	5
Sell 4-wheel ATV	0	1	7	3
Buy 4-wheel truck	3	2	3	9
Sell 4-wheel truck	1	1	1	14
Buy any ORV	25	9	16	16
Sell any ORV	25	10	11	20

Table 18-9. Selected activities in which ORV was used by ORV registrants during the previous 12 months.

Activity	TYPE OF VEHICLE REGISTERED 2-Wheel	3-Wheel	4-Wheel ATV	4-Wheel Truck
	percent			
Trail riding	96	90	95	81
Camping	31	31	35	55
Hunting	14	48	51	54
Ice fishing	6	33	29	23
Open water fishing	5	9	10	21

Table 18-10. Participation by ORV registrants in selected outdoor recreation activities during the previous 12 months.

Activity	TYPE OF VEHICLE REGISTERED 2-Wheel	3-Wheel	4-Wheel ATV	4-Wheel Truck
	percentage participating			
Fishing	66	67	72	60
Hunting	53	64	72	70
Snowmobiling	40	46	45	35
Hiking	31	27	32	30
Cross-country skiing	21	17	16	14
Backpacking	8	5	9	8

day. If the registrant or another person or persons rode the ORV during the same day, it was still counted as a user-day. This more accurately portrays legal off-road use since many people ride registered ORVs who are not registrants (Table 18-11). In fact, over three-quarters of the three and four-wheel ATV registrants reported others driving their vehicles during the previous 12 months. Moreover, over 20% of the other drivers of two-wheelers and three and four-wheel ATVs were under 16. Since very few registrants are this young, activity by this major rider group was overlooked in the previous study.

Respondents were asked to list the counties in which the target ORV was ridden during the previous 12 months. The target ORV was defined as the registered ORV of the type specified on the questionnaire which the respondent rode most often. Respondents were asked to indicate the number of days and the locations in which the vehicle was used in off-road situations. Aggregate activity estimates by type of vehicle were derived by extrapolating the sum of the user-days respondents reported to the entire population of registrants in a given vehicle class. These populations were defined as those ORVs registered as of February 7, 1989, or 34,233 two-wheelers, 32,914 three-wheelers, and 88,622 four-wheel ATVs and truck/sport vehicles. From data collected in the survey it was estimated that 72%, or 64,251, of the four-wheel vehicles were ATVs and 28%, or 24,371, were truck/sport vehicles.

The estimated amount and location of registered off-road use by vehicle type and MDNR district for a 12 month period which included portions of 1987 and 1988 are portrayed in Table 18-12. As shown therein, aggregate activity in a given MDNR district varied by vehicle type. Two-wheeler activity was concentrated in the Lower Peninsula, with almost half occurring in the southern third of the state (Districts 9, 12, 13, and 14). Three-wheeler activity was the most evenly distributed across the state. Four-wheel truck activity was more concentrated in northern Lower Michigan (Districts 5, 6, and 7) than any other type of ORV use. The most riding activity from each type of ORV and all ORVs combined occurred in northeast Lower Michigan (District 7).

Perceived Changes in ORV Participation

When asked if the target ORV had been used more during the past 12 months than during the year prior to that, a higher percentage of respondents in each vehicle group felt that their use had decreased rather than increased (Table 18-13). Three-wheel registrants were the least likely to have reported increased use, which again may reflect safety concerns about three-wheel vehicles and/or the cost of parts for these discontinued vehicles.

Lack of time was the most frequently cited reason for decreased use (Table 18-14). Few cited lack of interest or other activities substituting for ORV use.

More free time or a new or more serviceable vehicle were most frequently mentioned as the most important reason for increased use (Table 18-15). Finding new places to ride was frequently mentioned by two-wheel registrants. Having people to ride with was commonly mentioned by three-wheel registrants.

Annual Fuel Consumption and Unrefunded Gasoline Sales Tax

Fuel consumption by ORVs in off-road situations was estimated by asking respondents how much fuel they had purchased for off-road use in their ORV during the previous 12 months. Respondents were also asked to characterize their estimate as a "wild guess," "in the ballpark," or "very accurate." Estimates characterized as "wild guesses" were eliminated from the analysis. Estimates account for registered ORVs which consumed no gasoline in off-road

Table 18-11. Selected characteristics of ORV drivers other than registrant during previous 12 months.

	TYPE OF VEHICLE REGISTERED			
	2-Wheel	3-Wheel	4-Wheel ATV	4-Wheel Truck
	percent			
Target vehicle driven by others	56	76	79	36
Other drivers under 12	8	10	6	3
Other drivers under 16	27	24	21	8
Other drivers over 49	4	6	4	5

Table 18-12. Estimated number of ORV user-days by MDNR district.

	TYPE OF VEHICLE REGISTERED									
MDNR	2-Wheel		3-Wheel		4-Wheel ATV		4-Wheel Truck		Total	
District	Number	%	Number	%	Number	%	Number	%	Number	%
1	550	0.1	76,169	10.0	73,362	3.6	5,559	1.0	155,640	3.8
3	7,191	0.9	91,736	12.1	144,619	7.1	7,055	1.3	250,601	6.1
4	4,475	0.6	42,104	5.6	85,073	4.2	21,889	4.1	153,541	3.7
5	73,475	9.5	44,914	5.9	79,572	3.9	32,451	6.0	230,412	5.6
6	69,000	9.0	60,789	8.0	250,107	12.2	113,498	21.2	493,394	12.0
7	237,543	30.8	194,250	25.6	552,753	27.1	178,251	33.1	1,162,797	28.3
9	102,774	13.3	72,746	9.6	234,054	11.5	94,406	17.5	503,980	12.3
12	8,332	1.1	54,396	7.2	105,617	5.2	12,827	2.4	181,172	4.4
13	114,052	14.8	69,674	9.2	299,467	14.7	40,063	7.4	523,256	12.7
14	152,601	19.8	51,876	6.8	217,077	10.6	33,051	6.1	454,605	11.1
Total	769,993	100.0	758,654	100.0	2,041,701	100.0	539,050	100.0	4,109,398	100.0

NOTE: Details may not add to totals due to rounding error.

Table 18-13. Perceived change in ORV use by ORV registrants.

Amount of Use in Past Year Versus 2 Years Ago	TYPE OF VEHICLE REGISTERED			
	2-Wheel	3-Wheel	4-Wheel ATV	4-Wheel Truck
	percent			
Less in past year	40	37	32	33
More in past year	26	12	23	22
Same in both years	34	50	45	44

Table 18-14. Most important reason for decreased use of ORV by ORV registrants in past 12 months.[1]

Reason	TYPE OF VEHICLE REGISTERED 2-Wheel	3-Wheel	4-Wheel ATV	4-Wheel Truck
	----------percent----------			
Lack time	52	42	35	53
Lack place to ride	12	7	13	6
Lack serviceable vehicle	11	7	9	16
Strict ORV rules	1	7	0	0
Lack people to ride with	2	7	2	0
Poor weather	2	4	8	3
Lack interest	1	7	7	0
Family concerns	6	4	5	6
Health concerns	2	4	6	3
Less complimentary activity	2	1	0	3
Doing other things	4	1	3	3
Lack money	2	0	2	6
Less time near popular riding areas	2	4	6	0

[1] Open ended question.

Table 18-15. Most important reason for increased use of ORV by ORV registrants in past 12 months.[1]

Reason	TYPE OF VEHICLE REGISTERED 2-Wheel	 3-Wheel	 4-Wheel ATV	 4-Wheel Truck
	percent			
More time	26	26	23	23
Vehicle fixed or new during period	22	22	42	41
More new places to ride	24	4	8	18
More people to ride with	6	22	8	0
More complementary activities	0	22	2	0
Family reasons	9	0	8	9
More money	4	4	0	0
Better health	2	4	0	0
More enjoyment	6	0	7	4
Got vehicle registered	0	0	0	4

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[1] Open ended question.

situations during the previous 12 months. The amount of unrefunded state gasoline sales tax associated with off-road use of ORVs was estimated by multiplying the tax rate of fifteen cents per gallon by the estimated number of gallons of gasoline used in off-road situations. As shown in Table 18-16, two-wheelers consumed an estimated 1.3 million gallons of fuel, three-wheelers an estimated 1.4 million gallons, four-wheel ATVs an estimated 3.1 million gallons, and four-wheel trucks an estimated 2.1 million gallons, for a total consumption of 7.9 million gallons across all vehicle categories. An estimated $1.2 million in unrefunded state sales tax can be attributed to this overall consumption of 7.9 million gallons of fuel.

Characteristics of Most Recent Use of Target ORV

Two-wheel registrants were the most likely to drive a different vehicle to the ORV site (Table 18-17). The use of a different vehicle was often unnecessary in the case of four-wheel trucks, many of which are legal to operate on highways. While two-wheel registrants on the average drove the longest distance to the riding site (103 miles), over 35% of these respondents rode less than 5 miles from their principal home. Three-wheel registrants were most likely to have ridden 5 miles or less from home, with 51% of the most recent rides occurring within 5 miles of home. Four-wheel truck registrants had the lowest proportion (16%) of most recent rides within 5 miles of home.

The use of designated signed and marked trails was uncommon in all vehicle groups. Only in the case of two-wheelers did more than a quarter of the respondents in a given vehicle group spend most of their last outing riding on a designated trail. Over 80% of the respondents in each vehicle group had previously ridden at the site where their most recent use occurred.

ORV use on trips of 50 or more miles from home, compared to overall ORV use, was more likely to have involved the use of a separate vehicle for transportation to the riding site and a designated trail as the principal riding site (Table 18-18). ORVs on such trips were also used for greater lengths of time compared to ORV use in general. Four-wheel truck registrants were the most likely to have traveled 50 or more miles from their home.

Expenditures in Nearby Communities

Respondents were asked to estimate how much they had spent from 12:01 a.m. to 12:00 p.m. of the day of their most recent ORV use in an area within 25 miles of the riding site. The results, shown in Table 18-19, pertain only to respondents who rode at a riding site 50 or more miles from their principal home.

Spending per capita and per party was highest for two-wheel registrants and lowest for three-wheel registrants. The items generating spending by the highest percentage of respondents in each group were ORV vehicle expenses and groceries.

Estimates of annual ORV use occurring 50 or more miles from home (i.e., the percentage of most recent use that occurred 50 or more miles from home times the estimated total annual ORV use) were multiplied by per capita spending estimates to estimate annual ORV-attributable local spending (Table 18-20). The resulting estimate is very conservative since it only includes the expenditures of one person for each ORV user-day. This resulted because the information provided by respondents did not permit a determination of how many ORVs were in the party or which members of the party actually used the ORVs during the most recent use. Consequently it was necessary to conservatively assume that only one person used the target ORV and that this person's spending equalled average per capita spending.

Table 18-16. Estimated amount of fuel consumed by registered ORVs in off-road situations during a 12 month period in 1987-1988.

	TYPE OF VEHICLE REGISTERED				
	2-Wheel	3-Wheel	4-Wheel ATV	4-Wheel Truck	Total
Number registered[1]	34,233	32,914	64,251	24,371	155,769
Mean gallons of fuel consumed	37.3	41.6	48.0	87.8	50.5
Total gallons of fuel consumed	1,276,891	1,369,222	3,084,048	2,139,774	7,869,935
Total amount of nonrefunded state sales tax	$191,534	$205,383	$462,607	$320,966	$1,180,490

[1] As of February 7, 1989, according to Michigan Secretary of State.

Table 18-17. Selected characteristics of ORV registrants' most recent use of ORV.

	TYPE OF VEHICLE REGISTERED			
Characteristic	2-Wheel	3-Wheel	4-Wheel ATV	4-Wheel Truck
Percentage driving other vehicle to ORV site	56	40	46	25
Mean number of miles from principal home to ORV site	103	73	79	93
Mean hours ORV ridden	3.9	2.8	3.6	4.1
Percentage in which person other than registrant operated ORV	75	69	64	45
Percentage whose use was principally on a designated ORV trail	34	8	22	18
Percentage who had previously ridden at the site	85	87	85	84

Table 18-18. Selected characteristics of ORV registrants' most recent use of ORV if that use was more than 50 miles from principal home.

	TYPE OF VEHICLE REGISTERED			
	2-Wheel	3-Wheel	4-Wheel ATV	4-Wheel Truck
Percentage of most recent uses occurring 50 or more miles away from principal home	45	26	32	52
Percentage driving other vehicle to ORV site	85	83	79	37
Mean miles driven to ORV site	169	160	162	152
Mean hours ORV ridden	5.0	3.9	5.2	4.8
Percentage when persons other than registrant operated ORV	73	66	64	64
Percentage whose use was principally on a designated ORV trail	58	20	50	25
Percentage who had previously ridden at the site	83	80	82	88

Table 18-19. Local party spending during the day of most recent use by ORV registrants who rode 50 or more miles from their principal home.[1]

Item	TYPE OF VEHICLE REGISTERED			
	2-Wheel	3-Wheel	4-Wheel ATV	4-Wheel Truck
	--------mean spending (percent spending something on item)--------			
Groceries	$ 28.73 (83)	$14.85 (65)	$18.80 (75)	$25.92 (82)
Restaurant	27.02 (70)	11.39 (52)	14.26 (58)	15.10 (62)
Non-ORV vehicle expenses	22.80 (76)	12.69 (53)	20.54 (65)	14.14 (63)
ORV vehicle expenses	16.38 (77)	6.65 (65)	11.08 (71)	1.50 (83)
Lodging	16.23 (25)	4.02 (11)	10.04 (23)	11.03 (25)
Other	5.49 (20)	6.45 (28)	6.20 (14)	6.69 (30)
Total	$101.65	$56.05	$80.92	$84.38
Mean party size	5.0 persons	4.2 persons	5.0 persons	4.6 persons
Mean per capita spending	$20.33	$13.34	$16.18	$18.34

[1] "Local" means within 25 miles of the riding site and "day" means from 12:01 a.m. to 12:00 p.m. the day the vehicle was ridden.

Table 18-20. Estimated annual local[1] spending in Michigan by ORV registrants who rode at a site 50 or more miles away from their principal home.[2]

Item	TYPE OF VEHICLE REGISTERED 2-Wheel	3-Wheel	4-Wheel ATV	4-Wheel Truck	Total
Estimated number of user days	348,807	199,526	647,219	281,923	1,477,475
Estimated per capita spending[3]	$20.33	$13.34	$16.18	$18.34	$ 17.19
Total estimated ORV local spending	$7,091,246	$2,661,679	$10,472,003	$5,170,468	$25,395,396

[1] "Local" means within 25 miles of the ORV riding site.

[2] Only spending for one rider estimated, not all members of party.

[3] Derivation of per capita spending is shown in Table 18-19.

Estimated annual local spending was greatest in northern Lower Michigan (Districts 5, 6, and 7), with northeast Lower Michigan (District 7) receiving almost half (43%) of the statewide total (Table 18-21). The latter is a significant departure from the general pattern of greater tourist expenditures in northwest Lower Michigan compared to northeast Lower Michigan.

Management Preferences

Respondents were asked where in Michigan they would like new, public ORV facilities to be located. Two-wheel registrants showed a relatively strong preference for facilities in the southern Lower Peninsula (Table 18-22). The preferences of three-wheel registrants were the most evenly distributed across the state. Four-wheel ATV registrants were evenly split in their preferences between the northern and southern Lower Peninsula.

Respondents who resided in southern Lower Michigan were more likely to desire new facilities in either the Upper Peninsula or northern Lower Peninsula than respondents who resided in those regions were to desire facilities in the southern Lower Peninsula. Nevertheless, a sizeable proportion of respondents in each vehicle group desired new facilities in the southern Lower Peninsula.

Respondents were also asked to rate the desirability of various types of facilities on a scale from 1 to 9, where 1 was "highly undesirable" and 9 was "highly desirable." Respondents generally considered forest roads to be the most desirable facility, followed by loop trails and point-to-point trails (Table 18-23). All vehicle groups considered commercial tracks to be the least desirable facility, and woods and fields with no designated trails to be less desirable than any designated, non-commercial trail options.

When queried about the desirability of using snowmobile or cross-country ski trails for ORV riding during the summer, respondents were most favorable to the use of snowmobile trails but nevertheless stated that it would be somewhat desirable to use cross-country ski trails (Table 18-24). The separation of 50" ATV trails from two-wheeler trails was rated as moderately desirable.

When asked about the most important change that should be made to MDNR ORV trails, providing more riding opportunities was the most common response (Table 18-25). Improved signage and more places to ride in the southern Lower Peninsula were mentioned by sizeable proportions of two-wheel, three-wheel, and four-wheel ATV registrants, while better maps/information was mentioned by a sizeable proportion of four-wheel truck registrants. Relatively few respondents desired changes in the level of law enforcement, management of the trail-side environment, or restrictions on types of ORVs other than those they ride.

Table 18-21. Estimated annual local expenditures by users of registered ORVs who were 50 or more miles from their principal home when riding, by MDNR district.

MDNR District	General area in Michigan	Estimated Expenditures	Percent of Total
1	Western Upper Peninsula	$ 550,141	2.2
3	Central Upper Peninsula	189,020	0.7
4	Eastern Upper Peninsula	1,208,949	4.8
5	Northern tip of Lower Peninsula	2,629,606	10.4
6	Northwest Lower Peninsula	5,307,665	20.9
7	Northeast Lower Peninsula	10,999,539	43.3
9	West-Central Lower Peninsula	3,461,488	13.6
12	Southwest Lower Peninsula	118,921	0.5
13	South-Central Lower Peninsula	638,276	2.5
14	Southwest Lower Peninsula	291,814	1.1
	Statewide	$25,395,419	100.0

NOTE: "Local" means within 25 miles of the site where the ORV was ridden.

Table 18-22. Region of Michigan ORV registrants most preferred for new public ORV facilities.

	TYPE OF VEHICLE REGISTERED			
Region	2-Wheel	3-Wheel	4-Wheel ATV	4-Wheel Truck
	percent			
Upper Peninsula	10	25	18	11
Northern Lower Peninsula	36	42	41	48
Southern Lower Peninsula	54	33	41	42

Table 18-23. ORV registrants' rating of selected types of ORV riding opportunities.[1]

Opportunity	TYPE OF VEHICLE REGISTERED 2-Wheel	3-Wheel	4-Wheel ATV	4-Wheel Truck
	mean rating			
Forest roads	7.4	7.8	7.8	7.8
Loop trails	7.4	6.5	6.6	5.9
Point-to-point trails	6.7	6.4	6.7	6.4
Woods and field with no designated trail	5.5	6.1	6.2	5.8
Scramble areas	6.0	5.4	6.1	5.3
Commercial track	4.6	4.1	4.4	4.3

[1] Rating scale of 1-9 where 1 was "highly undesirable" and 9 was "highly desirable."

Table 18-24. ORV registrants' rating of selected trail management options.[1]

Option	TYPE OF VEHICLE REGISTERED 2-Wheel	3-Wheel	4-Wheel ATV	4-Wheel Truck
	mean rating			
Combination summer ORV/winter snowmobile trails	7.5	7.4	7.7	7.0
Combination summer ORV/winter cross-country ski trails	6.1	5.6	5.9	5.3
50" ATV trails separate from 2 wheel cycle trails	5.8	6.0	5.9	5.9

[1] Rating scale of 1-9 where 1 was "highly undesirable" and 9 was "highly desirable."

Table 18-25. Most important change in MDNR ORV trails desired by ORV registrants.[1]

Change	TYPE OF VEHICLE REGISTERED 2-Wheel	3-Wheel	4-Wheel ATV	4-Wheel Truck
	percent			
More riding opportunities	27	25	27	21
Better signage	12	4	6	4
More riding opportunities in S. Michigan	12	9	10	2
ORVs on road shoulders	0	6	8	2
Better maintenance	6	1	3	1
Better grooming	5	4	3	4
One direction trails	4	2	0	2
Nothing	4	3	4	3
Better maps/information	4	4	3	15
Restrict other types of ORVs	4	3	3	2
Summer ATV use on snowmobile trails	0	3	2	2
More law enforcement	2	3	0	4
Reduce timber harvest	1	0	2	4
Less law enforcement	2	2	2	3
No knowledge/don't use	2	10	7	4
All others	15	21	18	30

[1] Open ended question.

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CHAPTER 19

HIKING AND BACKPACKING IN MICHIGAN

Charles M. Nelson

Introduction

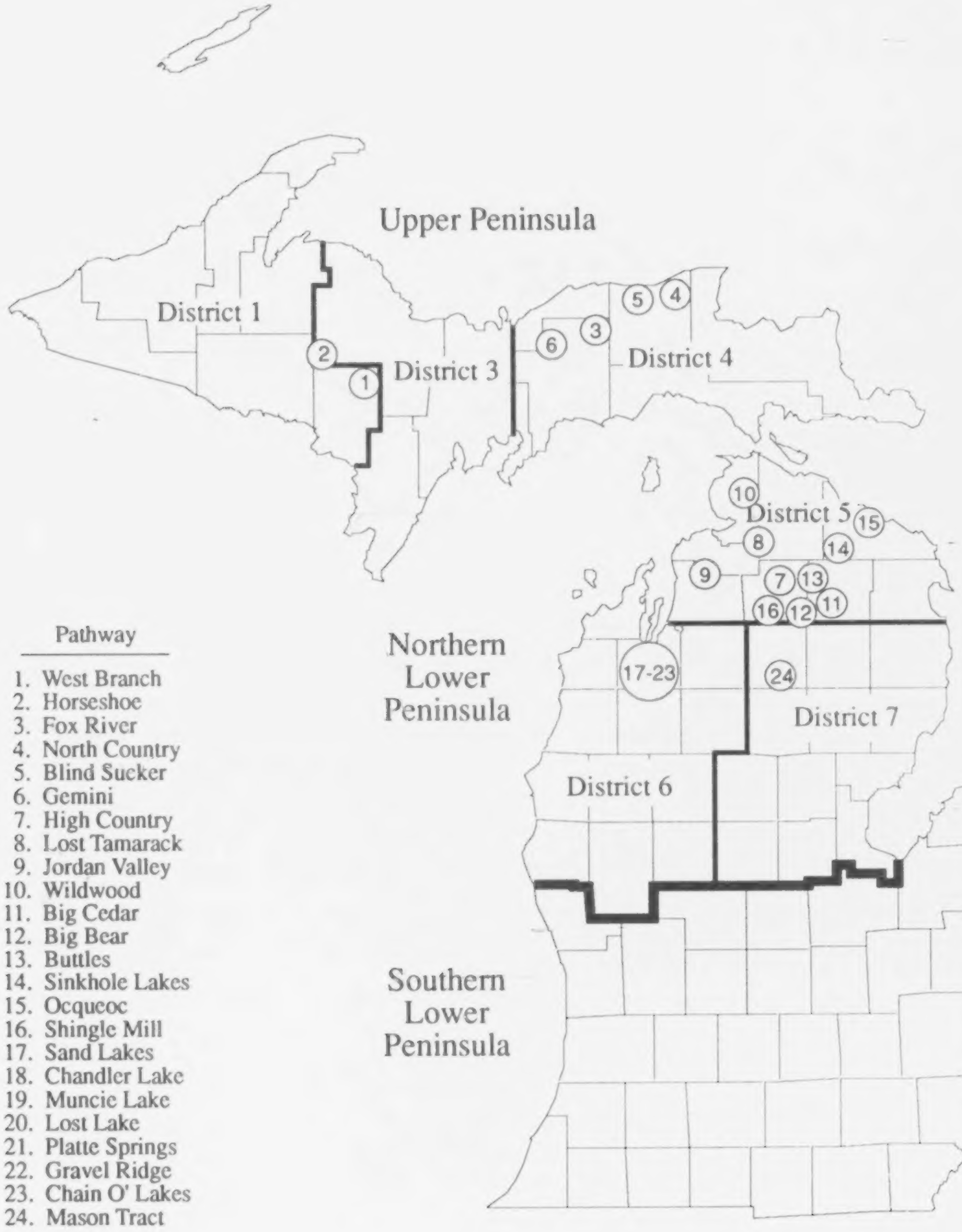
Hiking and backpacking are recreational pursuits of many of the tourists who travel in Michigan. A survey by Ross Roy, Inc. found that 14% of the pleasure travelers residing in metropolitan areas in the Great Lakes region who visited Michigan stated that these activities were of interest when on a pleasure trip (Table 3-4; page 31). Only fishing, swimming, and boating/water skiing were more frequently mentioned. Similarly, Spotts and Mahoney (1989) found that "day hiking for at least 2 hours" was a pursuit of 38% of the visitors to Michigan's central Upper Peninsula during their trips, and that backpacking was a pursuit of an additional 3%. Day hiking ranked only below "visiting an historic site" and swimming in popularity. Furthermore, Fridgen and others (1986) found that 66% of the campers and 45% of the day users visiting Michigan's state parks hiked the trails of a given park during their visits there. Hiking was the most popular activity at the park among campers and the third most popular activity at the park among day users.

Interest in hiking and backpacking in Michigan stems from both the quantity and quality of the opportunities the state affords to participate in these activities. A prominent guide to hiking trails in the Midwest states that "Michigan can reasonably claim to offer more to Midwest hikers and backpackers than any other state in the region" (Sullivan and Daniel, 1980:57). Moreover, backpacking opportunities in the Upper Peninsula are apparently of sufficient quality to have been the subject of several articles published in *Backpacker* magazine (Brown, 1977; Rice, 1978-79; Thornton, 1980).

Because of public interest in hiking and backpacking in Michigan, it is useful to know something of the characteristics, preferences, and behavior of those who participate in these activities, both for management and marketing purposes. At present, the only available current information on such recreationists is a recent survey of hikers and backpackers who used state forest pathways managed by the Michigan Department of Natural Resources (MDNR) (Nelson, 1988). The survey was sponsored by the Forest Management Division of the MDNR and conducted by the Department of Park and Recreation Resources at Michigan State University. A summary of most of the results of the survey follows. Information is presented on the characteristics of summer hikers and backpackers who used these pathways, their satisfaction with the pathways, and their preferences for pathway features and management actions. Results on respondents' preferences for financing state forest pathways may be found in Nelson (1988).

Survey Methods and Limitations

During the summer of 1987, sampling stations were placed on 24 of the 88 pathways in the state forest system (Figure 19-1). The pathways sampled represent nearly half of the total pathway mileage of the system. Sampling stations were set a short way down the pathway from parking areas. A sign requested pathway users to fill out a preaddressed, postage-paid postcard with their name, address, and telephone number and to indicate the pathway activities in which they were engaged. Follow-up telephone interviews were then completed with 220 of the 233 individuals who returned postcards between July 1 and September 30. The remaining postcard respondents could not be contacted. The distribution of respondents


Upper Peninsula
District 1
District 3
District 4
District 5
District 6
District 7
Northern Lower Peninsula
Southern Lower Peninsula
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17-23
24
Pathway
1. West Branch
2. Horseshoe
3. Fox River
4. North Country
5. Blind Sucker
6. Gemini
7. High Country
8. Lost Tamarack
9. Jordan Valley
10. Wildwood
11. Big Cedar
12. Big Bear
13. Buttles
14. Sinkhole Lakes
15. Ocqueoc
16. Shingle Mill
17. Sand Lakes
18. Chandler Lake
19. Muncie Lake
20. Lost Lake
21. Platte Springs
22. Gravel Ridge
23. Chain O' Lakes
24. Mason Tract

Note: These districts are no longer in use. See Figure 18-1
for current MDNR districts.

Figure 19-1. State forest pathways sampled in hiking / backpacking study.

by pathway and region is shown in Table 19-1.

Since respondents were self-selected, the sample may be biased in favor of those with strong interests in and/or opinions about hiking and/or backpacking.[1] Furthermore, since state forest pathways are located only in the northern two-thirds of the state, and since the characteristics of individuals who hike and/or backpack on such pathways may differ from those of individuals who hike and/or backpack at other locations (e.g., state parks, national lakeshores), the results presented below may not be representative of all individuals who participate in these activities in Michigan.

Results are presented for respondents grouped according to the region in which they obtained a survey postcard (i.e., Upper Peninsula or Northern Lower Peninsula) and for the sample as a whole. In all tables, statistics presented in columns denoted "all respondents" include 6 individuals who were sampled on undetermined pathways.

Results

Characteristics of Respondents

Respondents on the average were 39 years old, had an average of 15 years of education, and had a median annual income of between $30,000 and $40,000 (Table 19-2). Respondents tended to have higher education and income levels than the Michigan population (Verway, 1983).

Over a third of the respondents belonged to one or more organizations with an interest in pathway management (Table 19-3). This fairly high level of group membership may make communication with a wide range of pathway users possible via these organizations' newsletters. It also may make it possible for tourism promoters to reach many hikers and backpackers through direct mail advertising (if these organizations are willing to release their membership lists). The most frequently cited organizations to which respondents belonged were the Sierra Club, the Wilderness Society, and Michigan United Conservation Clubs.

Origins and Destinations

The majority (56%) of the respondents resided in the Southern Lower Peninsula of Michigan (Table 19-4). Ninety-six percent of the Upper Peninsula respondents resided outside of the Upper Peninsula, and 68% of the Northern Lower Peninsula respondents resided outside of the Northern Lower Peninsula. Respondents from out-of-state were most likely to use Upper Peninsula pathways, and comprised nearly a quarter of those who used such pathways. Ohio was the most common out-of-state origin. However, out-of-state origins were widely distributed throughout the Great Lakes region and beyond.

Of the various counties in Michigan, Upper Peninsula respondents were most likely to have come from the counties of Washtenaw (11%), Oakland (9%), Wayne (6%), Ottawa (4%), and Roscommon (4%); Northern Lower Peninsula respondents were most likely to have come from the counties of Grand Traverse (17%), Oakland (10%), Ingham (9%), Wayne (6%), and Washtenaw (6%); and respondents in the sample as a whole were most likely to have come from the counties of Grand Traverse (14%), Oakland (9%), Ingham (7%), Washtenaw (7%), and Wayne (6%).

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[1] It was also possible for a given hiker or backpacker to respond more than once. However, no duplicate questionnaires were noted.

Table 19-1. Distribution of respondents to state forest hiking/backpacking study by pathway, district, and region.

Pathway	District	Number of Respondents	Percentage of Total
UP Pathways			
West Branch	1	1	0
Horseshoe	3	3	1
Fox River	4	17	8
North Country	4	15	7
Blind Sucker	4	4	2
Gemini	4	5	2
Unknown UP Pathway	--	1	0
Total UP	--	46	21
NLP Pathways			
High Country	5	13	6
Lost Tamarack	5	1	0
Jordan Valley	5	15	7
Wildwood	5	4	2
Clear Lake	5	1	0
Big Bear	5	4	2
Buttles	5	3	1
Sinkhole Lakes	5	15	7
Ocqueoc	5	3	1
Shingle Mill	5	12	6
Sand Lakes	6	59	27
Chandler Lake	6	4	2
Muncie Lakes	6	6	3
Lost Lake	6	6	3
Platte Springs	6	4	2
Gravel Ridge	6	2	1
Chain O' Lakes	6	10	4
Mason Tract	7	5	2
Unknown NLP Pathway	--	1	0
Total NLP	--	168	76
Unknown Pathway	--	6	3
Total	--	220	100

Table 19-2. Age, education, and income levels of state forest hikers and backpackers.

	All Respondents	UP Respondents	NLP Respondents
Average age	39.3	42.2	38.6
Average years of education	14.9	14.6	15.0
Median income range	$30,000-$39,999	$30,000-$39,999	$30,000-$39,999

Table 19-3. State forest hikers' and backpackers' membership in selected outdoor recreation and environmental organizations.

Organization	All Respondents	UP Respondents	NLP Respondents
	percentage members		
Sierra Club	10	13	11
Wilderness Society	10	17	8
Michigan United Conservation Clubs	9	11	8
Audubon Society	5	14	5
Four-H	5	4	5
The Nature Conservancy	5	3	5
National Campers and Hikers Association	2	4	2
Boy Scouts of America	2	0	2
National Wildlife Federation	1	3	1
Member of one or more of the above	38	48	36

Table 19-4. Origins of hikers and backpackers who used Michigan state forest pathways.

Origin	All Respondents	UP Respondents	NLP Respondents
	percent		
Michigan			
Upper Peninsula	2	4	1
Northern Lower Peninsula	29	18	32
Southern Lower Peninsula	56	54	58
Total	87	76	91
Out-of-state			
Illinois	2	4	2
Indiana	1	2	1
Minnesota	0	0	1
Ohio	4	6	3
Wisconsin	1	4	1
Other	4	6	2
Total	13	24	9

NOTE: Details may not add to totals due to rounding error.

Seventy-six percent of the respondents used a pathway in the Northern Lower Peninsula and 21% used a pathway in the Upper Peninsula. Assuming response rates are constant across pathways, the distribution of respondents across the pathways sampled provides an estimate of the relative popularity of these pathways in terms of the total number of people who hike or backpack on them. On this basis the Sand Lakes Quiet Area appears to have been the most popular pathway studied, while the Fox River, North Country, Jordan Valley, High Country, Shingle Mill, Sinkhole Lakes, and Chain O' Lakes pathways appear to have been moderately popular.

Participation in Forest Recreation Activities

When asked whether they participated in any of eight selected forest recreation activities during the previous year (1986), the most frequently-mentioned activity was hiking, which was a pursuit of 94% of the sample (Table 19-5). Cross-country skiing was a distant second, with 53% of the respondents participating. Fishing was a pursuit of 50% of the respondents, backpacking was a pursuit of 34% of the sample, and hunting was a pursuit of 26% of the sample. Horse trail riding, mountain bike riding, and ORV riding were infrequently cited.

Compared to national participation rates for Americans 12 and over (U.S. Department of the Interior, 1986), respondents were more likely to hunt, fish, and cross-country ski than the general population. They were equally likely to participate in horseback riding and less likely to participate in ORV riding.

Satisfaction Levels

Respondents were asked to indicate their satisfaction with the pathway they utilized on a scale from 1 ("very dissatisfied") to 9 ("very satisfied"). Mean ratings were 7.8 for Upper Peninsula respondents, 7.7 for Northern Lower Peninsula respondents, and 7.8 for respondents statewide. When asked to indicate the most important factor in determining their rating, the most frequently mentioned positive factor was variety of terrain, while the most frequently mentioned negative factors were poor trail marking and maintenance (Table 19-6).

Management Preferences

Respondents were asked to rate, on a scale from 1 ("unimportant") to 9 ("very important"), the importance of various possible pathway features. Adequate pathway marking received the highest mean rating (Table 19-7). Loop pathways were much more highly rated than point-to-point pathways. Less than moderate importance was placed on pathways where two can walk abreast or pathways with access to motor vehicle camping.

Most respondents supported continuation of the requirement that state forest campers obtain a free MDNR camping permit, but expressed little support for allowing untethered dogs, mountain biking, or clearcutting on pathways (Table 19-8). Currently, untethered dogs and mountain biking are allowed on pathways. Clearcutting is often screened by leaving buffers between the pathway and the clearcut, but extensive clearcuts adjacent to pathways have sometimes occurred.

When asked which characteristics of state forest pathways they most wished to remain unchanged, the natural, rustic setting was the most frequent response (Table 19-9). Concern about the possibility of concessioners controlling pathways may have stimulated responses concerning keeping pathways open to the public and maintaining their non-commercial status.

Table 19-5. State forest hikers' and backpackers' involvement in selected forest recreation activities during 1986.

Activity	All Respondents	UP Respondents	NLP Respondents
	------------percentage participating----------		
Hiking	94	87	95
Cross-country skiing	53	50	55
Fishing	50	52	49
Backpacking	34	20	38
Hunting	26	24	27
Off road vehicle riding	7	2	8
Mountain biking	5	6	5
Horse trail riding	5	9	4

Table 19-6. Most important factor in determining state forest hikers' and backpackers' rating of pathway used.[1]

Factors	All Respondents	UP Respondents	NLP Respondents
	-----------percent-----------		
Positive factors			
Variety of terrain	23	30	21
Solitude	10	6	12
Good trail markings	9	13	8
Good trail maintenance	9	6	10
Enjoyable	6	4	5
All other positive factors	7	7	6
Total positive factors	64	67	61
Negative factors			
Inadequate trail marking	14	6	17
Inadequate trail maintenance	6	6	5
All other negative factors	11	15	11
Total negative factors	32	28	33
Other factors	6	4	5
Total	100	100	100

NOTE: Details may not add to totals due to rounding error.

[1] Open ended question.

Table 19-7. State forest hikers' and backpackers' rated importance of possible pathway features.[1]

Pathway Feature	All Respondents	UP Respondents	NLP Respondents
	mean rating		
Adequate marking	7.9	7.9	7.9
Loop style pathway	7.5	7.1	7.6
Pathway accessible to handicappers	6.6	7.0	6.4
Pathway camping facilities not accessible to motor vehicles	6.5	6.3	6.5
Interpretive signs describing natural features along pathway	5.8	5.9	5.8
Point-to-point style pathway	5.3	5.7	5.2
Pathway at least 4 feet wide	4.5	4.2	4.6
Pathway camping facilities accessible to motor vehicles	3.7	4.1	3.5

[1] Rating scale was 1-9 with 1 "unimportant," 5 "moderately important," and 9 "very important."

Table 19-8. State forest hikers' and backpackers' support for selected pathway policies.[1]

Policy	All Respondents	UP Respondents	NLP Respondents
	mean rating		
Require a free camping permit for all camping on state forest land where no designated campground exists	6.8	6.7	6.8
Allow non-horse riding people to camp at horse trail camps	5.8	5.6	5.9
Allow horse riding and hiking on the same pathway	5.0	5.1	5.0
Allow untethered dogs on pathways	4.0	3.8	4.0
Allow mountain bikes on pathways	3.9	3.8	3.8
Allow clearcutting on pathways	3.9	4.2	3.8

[1] Rating scale was 1-9 with 1 "strongly not support," 5 "neutral," and 9 "strongly support."

Table 19-9. Most important feature of state forest pathways state forest hikers and backpackers would like to remain unchanged.[1]

	All Respondents	UP Respondents	NLP Respondents
	percentage mentioning		
Natural, rustic setting	36	20	40
Well-marked pathway	15	24	13
Well-maintained pathway	13	20	12
No ORVs allowed	10	7	12
Open to the public	5	7	5
Non-commercial	5	9	4
No fee to use	4	4	4
Many pathways	3	2	4
All others (none mentioned by less than 2%)	8	7	9
Total	100	100	100

NOTE: Details may not add to totals due to rounding error.

[1] Open ended question.

When asked to state the most important management change respondents desired, the most common response was "no change" (Table 19-10). However, 81% of the respondents did desire some change. The most frequently mentioned change was better information about pathways, possibly because at the time of the survey no comprehensive listing of pathway opportunities published by the MDNR existed at the district, region, or state forest system level.

Respondents also expressed a desire for more pathways. While there may be instances where new pathways are needed, it may be possible to meet much of this demand far less expensively by simply better informing potential hikers and backpackers of existing pathways. It is unlikely that all such individuals are familiar with each of the 88 state forest pathways, especially since only 40% of the respondents had previously visited the pathway where they were sampled.

When asked to rate the importance of various possible sources of information about state forest pathways, the highest mean rating was given to a comprehensive book on such pathways (Table 19-11). However, all the listed information sources were rated between moderately and very important in both regions.

Summary and Conclusions

State forest hikers and backpackers tend to have above-average education and income levels and to reside outside the regions in which they hiked or backpacked. They are generally satisfied with the hiking and backpacking experiences provided by state forest pathways and seek well-marked and maintained trails in a natural, rustic setting. While the above findings provide some insights to guide management and marketing decisions, much remains to be learned about the hikers and backpackers who use state forest pathways (as well as those who use other trail systems), including their information sources and levels, their trip and party characteristics, and their spending behavior.

Table 19-10. Most important change in state forest pathways desired by state forest hikers and backpackers.[1]

Response	All Respondents	UP Respondents	NLP Respondents
	percentage mentioning		
No change needed	19	29	16
Provide more information about pathways	17	17	17
Improve trail marking	13	7	14
Construct more pathways	12	12	12
Better maintain pathways	8	10	8
Better enforcement against ORVs	7	2	9
Better enforcement against vandalism	5	2	6
Better signs on main roads	2	0	3
More varied trail layout	2	5	1
All others (none mentioned by more than 1% of sample)	14	12	13
Total	100	100	100

NOTE: Details may not add to totals due to rounding error.

[1] Open ended question.

Table 19-11. State forest hikers' and backpackers' rated importance of possible pathway information sources.[1]

Information Source	All Respondents	UP Respondents	NLP Respondents
	mean rating		
Book about all state forest pathways	8.0	8.0	8.1
Adequate signage on major access road	7.4	7.0	7.5
Brochures for individual pathways	7.3	7.0	7.4
Scale map handout at each pathway trail head	7.3	6.8	7.4
Routed map sign at each pathway trail head	7.2	6.9	7.4
Sign at trail head with pathway name	7.1	7.1	7.1

[1] Rating scale was 1-9 with 1 "unimportant," 5 "moderately important," and 9 "very important."

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CHAPTER 20

HUNTING IN MICHIGAN

Charles M. Nelson

Introduction

Hunting is a popular recreation activity in Michigan. In 1985 over 13% of Michigan's population age 16 or older hunted, compared to only 9% of the nation's population (U.S. Fish and Wildlife Service, 1988). Besides these 870,000 residents over 15 who hunted in Michigan that year, an additional 73,000 nonresidents also hunted in Michigan. These 943,000 hunters comprised 6% of all hunters in the United States. Of the other states, only Texas and Pennsylvania had more people hunt within their borders than Michigan (U.S. Fish and Wildlife Service, 1988:118). The popularity of hunting in Michigan is also attested by the fact that only 5% of Michigan hunters hunted in other states, whereas nationally 13% of hunters hunted in two or more states (U.S. Fish and Wildlife Service, 1988:117).

Resident and nonresident hunters participated in an estimated 14.9 million hunts in Michigan in 1985.[1] Big game was sought on 50% of the hunts, small game on 44% of the hunts, migratory birds on 5% of the hunts, and other game on 5% of the hunts (U.S. Fish and Wildlife Service, 1988:130).[2]

To aid both policy and marketing decisions with respect to hunting in Michigan, this chapter discusses the supply of hunting opportunities, the economic value of hunting, and trends in hunting license sales, hunting activity, and game harvests in this state.[3]

Supply of Hunting Opportunities

Michigan's expansive public land base of over 7.5 million acres (or 20% of the state), coupled with large tracts of privately owned forest, farmlands, and wetlands, provides a wide variety of wildlife habitat and hunting opportunities. The ownership of lands open to public hunting in Michigan is portrayed in Table 20-1.

State forest lands, which comprise the largest portion of public hunting lands, are managed under a multiple-use concept. The state forest management plan stresses the

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[1] A hunt is one hunter hunting for any portion of one day.

[2] Percentages add to more than 100 because hunters can hunt more than one type of game during the same hunt.

[3] Recently, questions have been raised about the accuracy of the results of the 1985 National Survey of Hunting, Fishing, and Wildlife-Associated Recreation (U.S. Fish and Wildlife Service, 1988; 1989) and the possibility that some of these results may be upwardly biased. While this is not the place to discuss the technical merits and demerits of the survey, readers are encouraged to exercise caution in interpreting and employing the results of this survey as presented in this chapter. It is certainly hoped that the design of the survey will be openly and widely discussed and that future surveys will be improved if necessary. In the meantime, the results of this survey are the only available current statistics on hunting activity, harvest, and expenditures in each of the 50 states, and the only source of statistics on many aspects of hunting in Michigan.

Table 20-1. Acreage of lands open to public hunting in Michigan.

Land Owner	As of	Acres	Percent of Total
MDNR[1]			
State forests	Jan. 1, 1990	3,850,602	39.3
State game and wildlife areas	June 13, 1990	297,387	3.0
State park and recreation areas	June 20, 1990	226,944	2.3
Public access program	Fall, 1989	112,080	1.1
Subtotal		4,487,013	45.8
Commercial Forest Act[1]	Jan. 1, 1990	2,304,000	23.5
Federal government[2]	Sept. 30, 1989	2,994,749	30.6
Total		9,785,762	100.0

[1] SOURCES: Personal communications, Gerald Thiede, Dan Tucker, Neil LaCasse, and Tom Nederveld, MDNR.

[2] SOURCES: U.S. Forest Service. 1989. *Land Areas of the National Forest System*. FS-383. Washington, D.C.: U.S. Forest Service; Personal communication, Seney National Wildlife Refuge, Pictured Rocks and Sleeping Bear Dunes National Lakeshores.

importance of managing lands for both wildlife and wood products, stating that "the value of the combined output is almost always greater than if management were directed at just one use" (MDNR, 1983:33). The plan also states that one of the major strategies to strengthen Michigan's economy through forest resource development is to intensify efforts to improve wildlife habitat to assure that wildlife recreation is provided on all forest lands.

State game and wildlife areas are lands intensively managed for wildlife through such efforts as vegetational manipulation to increase food or cover for desired wildlife species, agricultural practices that favor wildlife, and water level management to provide habitat for waterfowl. These areas are heavily used by hunters since most of them are located in populous southern Lower Michigan. Also, because of habitat management, exceptional hunting opportunities are created. Because of these attractive hunting conditions, managed hunts that limit hunter numbers and assign hunters to hunting areas are used at some game areas.

State park and recreation areas also provide hunting opportunities. Almost 75,000 acres of park land are open to hunting in southern Lower Michigan. However, because of the broad range of clientele attracted to state parks and the heavy emphasis on serving summer visitors, wildlife habitat in the parks is not as intensively managed as in game areas.

The Public Access Program, established under Act 373, P.A. 1976, procures public hunting easements from willing land owners, primarily in southern Lower Michigan. Easements are purchased by the MDNR using revenues from hunting license sales. In return for allowing hunting on their land, landowners are paid a per acre fee based on the quality of the wildlife habitat provided. Hunters are required to obtain a daily tag from the landowner that provides permission to hunt. The number of tags available from the landowner is limited to no more than one hunter per ten acres of wooded hunting area and one hunter per 20 acres of non-wooded area. Landowners are required to give a hunter a tag if they have any available when the hunter arrives. While it was hoped that the program would open more land to public hunting in southern Michigan, research suggests that the program has been only marginally successful in achieving this goal. However, the program has served to inform hunters about which landowners will allow hunting, thereby precluding the need for them to go "door to door" to obtain this information, and easing pressure on heavily used state game and wildlife areas (Holecek, 1983).

Federal lands open to hunting in Michigan include national wildlife refuges, national forests, and national lakeshores. The two major national wildlife refuges in the state are both involved primarily in waterfowl management. At Seney National Wildlife Refuge, in the eastern Upper Peninsula, hunting is allowed for big and small game, but not waterfowl, and at Shiawassee National Wildlife Refuge, near Saginaw, a managed hunting program for waterfowl and deer occurs on certain parts of the Refuge. National forests, located in the Upper Peninsula and the northern Lower Peninsula, are managed on a multiple-use basis similar to that practised on state forest lands, and are open to hunting. Finally, unlike most units of the National Park System, hunting is permitted at Pictured Rocks and Sleeping Bear Dunes National Lakeshores, in accordance with the federal legislation which established these areas.

Commercial Forest Act (Act 94, P.A. 1925) lands are private lands on which the state encourages forestry by reducing the landowner's property taxes. This loss in revenue to local units of government is partially offset by flat rate payments per acre by the state to local units. In addition, the landowner at the time of timber harvest makes a payment to the local unit in lieu of property taxes. The payment is called a yield tax and is proportionate to the value of the timber harvested. In exchange for this tax reduction, all enrolled lands are open to public hunting and fishing. The majority of such lands are in the Upper Peninsula and are owned by large forest products companies.

The lands open to hunting described above constitute 26% of the land base of Michigan. In addition, many more acres of private lands provide hunting opportunities to land owners and those given permission to hunt on these lands.

In 1985 an estimated 24% of those who hunted in Michigan hunted only on public lands, 39% hunted only on private lands, and 37% hunted on both public and private lands (U.S. Fish and Wildlife Service, 1988). Of an estimated 14.9 million hunts in 1985, 44% were to some extent on public land and 67% were to some extent on private lands. A larger percentage of nonresident hunters used public lands than did resident hunters, who were more likely to be landowners in Michigan. In 1985 state lands hosted 75% of the hunters who hunted on public lands in Michigan and 55% of the hunts on public lands in Michigan (Table 20-2).

The use of public and private lands for hunting by region of Michigan is shown in Table 20-3. The importance of public hunting areas is apparent in their heavy use. *On a per acre basis*, public areas were the sites of more than 4.5 times as many hunts as private areas. However, private lands hold the greatest potential for absorbing future hunting demand in Michigan, since the majority of the state's land base that can provide hunting is in the private sector. Innovative programs that encourage landowners to allow more hunting on their land could alleviate the intensity of hunting on public lands, especially those in southern Lower Michigan, where hunter densities are highest.

Hunting License Sales

In Michigan the hunting of game animals by all persons except landowners on their own property is licensed by the state. Between 1980 and 1984, substantial decreases in license sales occurred in most major license categories. Most noticeable was a decrease in resident hunting licenses, purchased by those over age 15 who wished to hunt small game or waterfowl. This decrease was also apparent with younger hunters in the reduced sales of resident junior hunting licenses. These decreases in 1980-84 were part of a longer-term decrease in resident hunting license sales. However, this trend was generally reversed in 1985-89 (Table 20-4). While hunting license sales continued to slowly decline, the sale of both senior and non-senior sportsperson licenses increased, resulting in as many potential small game hunters in 1989 as in 1985. Also, the addition of a three-day nonresident hunting license option to the annual nonresident hunting license increased total sales to nonresidents. The junior resident hunting licenses was the only type of license which continuously decreased in sales during 1985-89.

The sale of state waterfowl stamps leveled off in 1985-89 after a moderate decline during the previous five years and a precipitous decline in the late 1970s. A rapidly expanding local and migratory goose population has provided additional waterfowling opportunities in terms of a longer goose season, an increased bag limit, and a greater number of geese available. Conversely, duck populations have continued to decline and duck seasons have been shortened and bag limits lowered over the period.

Sales of all categories of deer licenses, especially archery deer licenses, increased during 1985-89. However, in 1989 a deer hunter could purchase two firearm deer licenses, two archery licenses, and apply for an antlerless deer permit, whereas in 1985 it was not possible to legally buy five licenses.

Sales of bear licenses rose steadily, and applications for turkey and elk hunting also increased during 1985-89. These application increases appear to be linked to the increasing popularity of these types of hunting and to the increased population and range of turkeys, and to a lesser extent elk.

Table 20-2. Estimated number of hunters and hunter-days on public land in Michigan, 1985.

	STATE RESIDENTS		NONRESIDENTS		RESIDENTS AND NONRESIDENTS	
	Number	Percent	Number	Percent	Number	Percent
HUNTERS						
Federal	137,300	26	15,600*	50*	152,900	27
State wildlife area	155,400	29	...	...	159,600	28
Other state area	259,500	48	10,200*	33*	269,700	47
Local	...	...	...	...	...	...
Unspecified public land[1]	104,500	19	...	...	110,900	20
Total	537,500	100	30,900*	100*	568,300	100
DAYS OF HUNTING						
Federal	1,225,500	19	118,400*	60*	1,343,800	20
State wildlife area	1,324,600	21	...	...	1,337,100	20
Other state area	2,288,500	36	41,200*	21*	2,329,600	35
Local	...	...	...	...	...	...
Unspecified public land[1]	1,361,200	21	...	...	1,383,700	21
Total	6,367,000	100	196,000*	100*	6,563,000	100

NOTE: Details do not add to totals due to nonresponse and multiple responses. Figures pertain to individuals age 16 or older. ... means sample size too small to report data reliably.

[1] Respondent was unable to say whether the publicly held area was owned by federal, state, or local government.

*Estimate based on a small sample size.

SOURCE: U.S. Fish and Wildlife Service. 1989. 1985 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation: Michigan. Washington, D.C.: U.S. Fish and Wildlife Service. Table 13.

Table 20-3. Hunting activity in Michigan during the 1980-81 hunting season by region and land ownership.

Land owner	Acres	Hunts	Hunts/ Acre	% of Hunts
UPPER PENINSULA				
Public	3,619,021	1,422,270	0.4	7.8
Private	6,966,075	692,920	0.1	3.8
Total	10,585,096	2,115,190	0.2	11.6
NORTHERN LOWER PENINSULA				
Public	2,865,904	4,927,148	1.7	26.9
Private	8,719,176	2,341,202	0.3	12.8
Total	11,585,080	7,268,350	0.6	39.7
SOUTHERN LOWER PENINSULA				
Public	506,324	3,526,586	7.0	19.3
Private	9,728,133	5,378,844	0.6	29.4
Total	10,048,959	8,905,430	0.9	48.7
STATEWIDE				
Public	6,991,249	9,876,004	1.4	54.0
Private	25,413,384	8,412,966	0.3	46.0
Total	32,404,633	18,288,970	0.6	100.0

SOURCE: Adapted from Urbain, John W. 1982. "Hunter Recreation Days by Zone." Michigan Dept. of Natural Resources, Wildlife Division. 1 pp. mimeo.

Table 20-4. Michigan hunting and trapping license sales, 1985-89.

License Category	1985	1986	1987	1988	1989	Percent Change, 1989 vs. 1985
Resident Hunt	300,892	291,962	284,249	269,178	276,333	- 8.2
Resident Hunt Jr.	43,426	40,753	37,511	35,416	34,996	- 19.4
3-Day Non-Res. Hunt	---	2,820	3,225	3,740	4,568	+ 62.0[a]
Non-Resident Hunt	6,262	3,554	3,821	3,848	4,242	- 32.2
Shooting Preserve	611	743	844	1,079	N.A.	N.A.
Resident Deer	651,999	739,046	759,353	737,864	697,400	+ 7.0
Non-Resident Deer	12,383	11,544	12,901	13,634	14,854	+ 20.0
Resident Bow & Arrow	181,873	204,832	218,827	228,366	243,372	+ 33.8
Res.. Bow & Arrow Jr.	20,836	22,783	23,531	24,581	25,554	+ 22.6
Non-Res. Bow & Arrow	4,917	4,344	4,704	5,094	5,456	+ 11.0
Resident Bear	8,179	10,280	10,874	11,942	11,694	+ 43.0
Non-Resident Bear	877	574	601	600	599	+ 31.7
Fur Harvester	---	16,015	19,464	14,602	11,850	- 26.0[a]
Fur Harvester Jr.	---	1,848	2,206	1,783	1,132	- 38.7[a]
Non-Res. Fur Harvester	---	26	24	17	N.A.	N.A.
Senior Hunt	64,680	64,019	66,968	69,227	70,665	+ 9.2
Sportsperson	33,103	44,649	52,401	61,807	66,440	+100.7
Waterfowl Stamp	61,523	65,276	68,605	63,042	61,633	+ 0.2
Anterless Deer App.	---	264,350	304,101	358,200	384,959	+ 45.6[a]
Elk Applications	---	36,084	38,682	40,199	44,180	+ 22.4[a]
Turkey Applications	---	25,804	24,091	29,092	47,167	+ 82.8[a]

NOTE: Figures are as of June 15 of each year.

[a] Percent change for 1989 versus 1986.

SOURCE: Michigan Department of Natural Resources, Administrative Services Division.

Fur harvester licenses were instituted in 1986 to replace the trapping license. Those who hunt furbearers such as fox, coyote, and raccoon must purchase this license as well as a small game license. Sales of fur harvester licenses dropped with declines in fur prices in the 1980s.

Hunting Activity and Harvest

This section discusses hunting activity and harvest with respect to small game, waterfowl, and big game. The tables accompanying the text provides estimates of the number of hunters, hunts, hunts per hunter, harvest, and harvest per hunter for a given game species by region for 1985-88. These estimates were derived from annual mail surveys of hunters conducted by the Wildlife Division of the MDNR. The response rates of these surveys exceeded 70% of deliverable questionnaires.

The discussion which follows focuses on changes that have taken place in the above variables between 1985 and 1988, both in the three regions of Michigan shown in Figure 20-1 and statewide.[4] To provide a more long-range perspective, changes that have occurred between 1979 and 1988 are also discussed. Statistics on 1979, though not presented in the tables, are from Wildlife Division reports and are comparable to their more recent estimates. The exposition is supplemented in places with information obtained from personal communications with MDNR wildlife specialists. In the text "effort" refers to total hunts, i.e., the aggregate number of days hunters spent in the field, and "success" refers to the average harvest per hunt.

Small Game Hunting

Pheasant Hunting

For many years ring-necked pheasants were harvested in large numbers in Michigan. In the 1950s, harvests of over a million cocks were common. However, in the 1960s declines in pheasant hunting and harvest began and continued through the 1970s and 80s. In 1986, the hybrid offspring of Michigan ring-necked pheasants and black-necked pheasants from the Sichuan province of the Peoples Republic of China were introduced. This introduction was based on the premise that wild strains of pheasants had not been used to establish Michigan's initial pheasant population and that perhaps the genetic makeup of ringnecked pheasants was not well suited to Michigan's environment. These hybrid pheasants have been planted in an 1,800 square mile area roughly in a crescent from Flint to Ann Arbor to Jackson. Populations were large enough in some areas to permit experimental hunting seasons in selected locations during the fall of 1990. Pure blacknecked pheasants were introduced into the wild in Michigan in 1987. This, coupled with the mild winters of the late 1980s and recent federal farm legislation that rewards farmers who set aside cropland for wildlife habitat and penalizes those that drain wetlands, appear to be responsible for slowly, but steadily increasing pheasant populations in Southern Lower Michigan and potentially better pheasant hunting opportunities in the near future.

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[4] The MDNR administrative boundary between the northern Lower Peninsula and the southern Lower Peninsula was changed in 1988 (Figure 20-1). The 1988 results in the small game, waterfowl, and deer hunting tables (Tables 20-5 through 20-15) pertain to the revised MDNR definitions of these regions. Results on 1988 and 1989 in the turkey hunting table (Table 20-17), however, pertain to the old definitions of these regions.

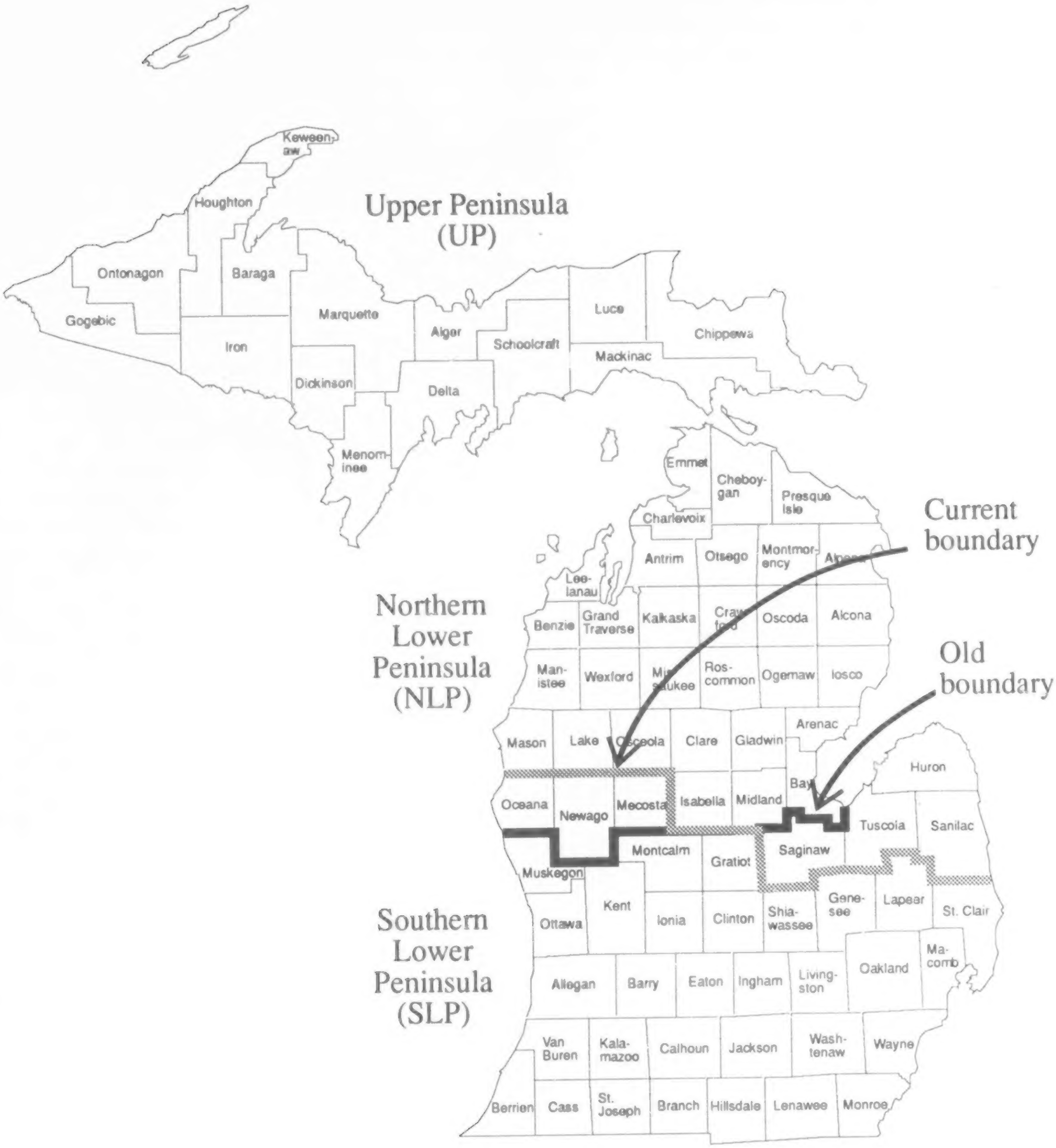
Upper Peninsula (UP)
Northern Lower Peninsula (NLP)
Southern Lower Peninsula (SLP)
Current boundary
Old boundary
Keweenaw
Houghton
Ontonagon
Baraga
Gogebic
Iron
Marquette
Dickinson
Menominee
Alger
Delta
Schoolcraft
Luce
Mackinac
Chippewa
Emmet
Cheboygan
Presque Isle
Charlevoix
Antrim
Otsego
Montmorency
Alpena
Leelanau
Benzie
Grand Traverse
Kalkaska
Crawford
Oscoda
Alcona
Manistee
Wexford
Missaukee
Roscommon
Ogemaw
Iosco
Mason
Lake
Osceola
Clare
Gladwin
Arenac
Huron
Oceana
Newago
Mecosta
Isabella
Midland
Bay
Tuscola
Sanilac
Muskegon
Montcalm
Gratiot
Saginaw
Ottawa
Kent
Ionia
Clinton
Shiawassee
Genesee
Lapear
St. Clair
Allegan
Barry
Eaton
Ingham
Livingston
Oakland
Macomb
Van Buren
Kalamazoo
Calhoun
Jackson
Washtenaw
Wayne
Berrien
Cass
St. Joseph
Branch
Hillsdale
Lenawee
Monroe

Figure 20-1. Current and former MDNR regional boundaries.

The proportion of potential hunters that actually hunted pheasants dropped moderately during 1985-88 (Table 20-5). However, the annual hunting effort of the remaining hunters increased. While season lengths and bag limits remained static, the legal area to hunt pheasants was reduced by area closures to protect the newly introduced black-necked pheasants. Average success in harvesting pheasants and the total number of hunter-days were at about the same levels in 1988 as in 1985. While the decline in pheasant hunting effort and success appears to have bottomed out, only a third as many hunters pursued pheasants in 1988 as in 1979, the harvest in 1988 was less than 25% of the harvest in 1979, and both participation and success were substantially lower than was the case during the heyday of pheasant hunting in the 1950s.

Ruffed Grouse Hunting

Ruffed grouse habitat and hunting in Michigan have improved due to increased timber harvest, especially of aspen, in northern Michigan, and the reversion of many farmed lands to brush and woods in the southern Lower Peninsula. The number of grouse hunters increased slightly during 1985-88 (Table 20-6), while the average number of hunts per hunter remained relatively constant. Harvest, both on a total and a per hunter basis, increased slightly. Participation and harvest increased in the Upper Peninsula, remained relatively constant in the northern Lower Peninsula, and generally declined in the southern Lower Peninsula. Between 1979 and 1988, the number of hunters dropped 31%, the number of hunts dropped 25%, and harvest dropped 10%, but harvest per hunt increased 19%.

Woodcock Hunting

Habitat conditions and hunting opportunities have also improved for woodcock in recent years. The number of hunters pursuing woodcock increased slightly during 1985-88, while their proportion of small game hunters remained relatively constant (Table 20-7). Harvest increased at a rate similar to the increase in the number of hunters and hunts. The number of hunts per hunter and the harvest per hunt remained static. Regionally, the major change has been increased participation and harvest in the Upper Peninsula, where effort increased 31% and harvest more than doubled. Between 1979 and 1988, the number of hunters decreased 34%, hunts decreased 28%, harvest decreased 19%, and harvest per hunt increased 12%.

Cottontail Rabbit Hunting

Cottontail rabbit hunting is the most popular type of small game hunting. The wide distribution of game, coupled with a hunting season that typically extends for over five months, provide hunting opportunities to a wide range of people.

The number of cottontail hunters and the proportion of small game hunters that hunted cottontails declined slightly during 1985-88 (Table 20-8). However, cottontails remained the most popular small game quarry. The number of hunts per hunter and success per hunt appear to be increasing. Southern Lower Michigan was the most popular and promising place to hunt cottontails.

Between 1979 and 1988, participation in cottontail hunting decreased 44%, hunts decreased 33%, and harvest decreased 9%. However, per hunt success increased 36%.

Table 20-5. Statistics on pheasant hunting in Michigan by MDNR region, 1985-88.

	1985	1986	1987	1988[a]
Potential hunters[b]	448,363	447,757	448,175	443,216
Actual hunters				
UP	1,190	1,480	1,160	1,730
NLP	22,870	15,780	17,720	16,860
SLP	82,790	68,790	69,340	67,590
Total	106,850	86,050	88,220	86,180
Percentage of potential hunters that hunted	24	19	20	19
Total hunts				
UP	4,770	13,530	4,510	7,360
NLP	114,580	76,330	105,030	104,770
SLP	423,810	356,430	361,560	435,740
Total	543,160	446,290	471,100	547,870
Hunts/hunter				
UP	4.0	9.1	3.9	4.2
NLP	5.0	4.8	5.9	6.2
SLP	5.1	5.2	5.2	6.4
Total	5.1	5.2	5.3	6.4
Harvest				
UP	1,530	2,710	2,710	2,200
NLP	29,940	12,330	28,350	13,490
SLP	80,770	69,420	82,090	85,770
Total	112,240	84,460	113,150	101,460
Harvest/hunt				
UP	.32	.20	.60	.30
NLP	.26	.16	.27	.13
SLP	.19	.19	.23	.20
Total	.21	.19	.24	.18

[a] The MDNR administrative boundary between the northern Lower Peninsula and the southern Lower Peninsula changed in 1988. Statistics in this column reflect this change. See Figure 20-1.

[b] Potential hunters includes those who purchased any of the following licenses: resident small game; non-resident small game; 3-day non-resident small game; resident junior small game; sportsperson; or senior hunt.

SOURCE: Reis, T. 1989. "Hunting Results, Michigan Small Game Hunting Seasons, 1988." Michigan Department of Natural Resources, Wildlife Division Report No. 3112. Lansing, MI: Michigan Department of Natural Resources.

Table 20-6. Statistics on ruffed grouse hunting in Michigan by MDNR region, 1985-88.

	1985	1986	1987	1988[a]
Potential hunters[b]	448,363	447,757	448,175	443,216
Actual hunters				
UP	35,400	41,080	39,620	44,810
NLP	73,040	74,550	78,340	74,040
SLP	48,150	42,220	45,060	41,820
Total	156,590	157,850	163,020	160,670
Percentage of potential hunters that hunted	35	35	36	36
Total hunts				
UP	384,410	436,720	402,270	448,310
NLP	550,610	549,340	531,510	563,020
SLP	320,260	283,950	377,060	314,630
Total	1,255,280	1,270,010	1,318,840	1,325,960
Hunts/hunter				
UP	10.8	10.6	10.2	10.0
NLP	7.5	7.4	6.8	7.6
SLP	6.6	6.7	8.4	7.5
Total	8.0	8.0	8.1	8.2
Harvest				
UP	189,530	229,130	248,650	296,370
NLP	266,770	204,090	227,550	272,050
SLP	108,630	88,610	111,710	84,270
Total	564,930	521,830	587,910	652,690
Harvest/hunt				
UP	.49	.52	.62	.66
NLP	.48	.37	.43	.48
SLP	.34	.31	.30	.27
Total	.45	.41	.44	.49

[a] The MDNR administrative boundary between the northern Lower Peninsula and the southern Lower Peninsula changed in 1988. Statistics in this column reflect this change. See Figure 20-1.

[b] Potential hunters includes those who purchased any of the following licenses: resident small game; non-resident small game; 3-day non-resident small game; resident junior small game; sportsperson; or senior hunt.

SOURCE: Reis, T. 1989. "Hunting Results, Michigan Small Game Hunting Seasons, 1988." Michigan Department of Natural Resources Wildlife Division, Report No. 3112. Lansing, MI: Michigan Department of Natural Resources.

Table 20-7. Statistics on woodcock hunting in Michigan by MDNR region, 1985-88.

	1985	1986	1987	1988[a]
Potential hunters[b]	448,363	447,757	448,175	443,216
Actual hunters				
UP	10,100	13,450	16,280	15,310
NLP	32,890	30,700	34,790	34,160
SLP	21,610	17,020	19,300	18,980
Total	64,600	61,170	70,370	68,450
Percentage of potential hunters that hunted	14	14	16	15
Total hunts				
UP	119,780	140,050	123,670	156,370
NLP	242,760	235,100	262,660	248,470
SLP	139,090	101,130	137,470	134,910
Total	501,630	476,280	523,800	539,750
Hunts/hunter				
UP	11.8	10.4	7.6	10.2
NLP	7.4	7.6	7.5	7.3
SLP	6.4	5.9	7.1	7.1
Total	7.8	7.8	7.4	7.9
Harvest				
UP	40,630	63,480	60,380	92,470
NLP	144,260	110,550	140,200	121,150
SLP	56,550	56,410	52,430	47,870
Total	241,440	230,440	253,010	261,490
Harvest/hunt				
UP	.34	.45	.49	.59
NLP	.59	.47	.53	.49
SLP	.41	.56	.38	.35
Total	.48	.48	.48	.48

[a] The MDNR administrative boundary between the northern Lower Peninsula and the southern Lower Peninsula changed in 1988. Statistics in this column reflect this change. See Figure 20-1.

[b] Potential hunters includes those who purchased any of the following licenses: resident small game; non-resident small game; 3-day non-resident small game; resident junior small game; sportsperson; or senior hunt.

SOURCE: Reis, T. 1989. "Hunting Results, Michigan Small Game Hunting Seasons, 1988." Michigan Department of Natural Resources Wildlife Division, Report No. 3112. Lansing, MI: Michigan Department of Natural Resources.

Table 20-8. Statistics on cottontail rabbit hunting in Michigan by MDNR region, 1985-88.

	1985	1986	1987	1988[a]
Potential hunters[b]	448,363	447,757	448,175	443,216
Actual hunters				
UP	7,210	8,230	8,630	8,780
NLP	48,100	48,010	52,560	50,220
SLP	124,570	112,240	117,020	109,890
Total	179,880	168,480	178,210	168,890
Percentage of potential hunters that hunted	40	38	40	38
Total hunts				
UP	64,500	59,010	73,920	105,090
NLP	442,100	396,840	520,200	515,660
SLP	1,202,540	1,066,580	1,066,900	1,149,310
Total	1,709,140	1,522,430	1,661,020	1,770,060
Hunts/hunter				
UP	8.9	7.2	8.6	12.0
NLP	9.2	8.3	9.9	10.3
SLP	9.6	9.5	9.1	10.5
Total	9.5	9.0	9.3	10.5
Harvest				
UP	17,630	18,400	29,580	31,370
NLP	212,570	165,590	262,880	280,250
SLP	639,020	558,100	700,460	759,750
Total	869,220	742,090	992,920	1,071,370
Harvest/hunt				
UP	.27	.31	.40	.30
NLP	.48	.42	.50	.54
SLP	.53	.52	.66	.66
Total	.51	.49	.60	.60

[a] The MDNR administrative boundary between the northern Lower Peninsula and the southern Lower Peninsula changed in 1988. Statistics in this column reflect this change. See Figure 20-1.

[b] Potential hunters includes those who purchased any of the following licenses: resident small game; nonresident small game; 3-day nonresident small game; resident junior small game; sportsperson; or senior hunt.

SOURCE: Reis, T. 1989. "Hunting Results, Michigan Small Game Hunting Seasons, 1988." Michigan Department of Natural Resources Wildlife Division Report No. 3112. Lansing, MI: Michigan Department of Natural Resources.

Snowshoe Hare Hunting

Snowshoe hares are not as widely distributed as cottontails. While the latter are found in forests and fields and seem to thrive near human habitation, snowshoes are generally animals of the northern forests of Michigan. This more limited distribution reduces the opportunity of many hunters to pursue snowshoes, although, like the cottontail, they have a long open season.

Both the number of snowshoe hunters and their proportion of small game hunters increased during 1985-1988 (Table 20-9). Effort increased 37%, harvest increased 79%, and success per hunt increased 30%. Greater increases in success and participation occurred in the Upper Peninsula than in other regions.

Between 1979 and 1988, the number of hunters decreased 44% and harvest decreased 24%. However, the number of hunts per hunter increased 14% and the harvest per hunt increased 20%.

Squirrel Hunting

Both the number of squirrel hunters and the proportion of small game hunters who hunted squirrels decreased slightly during 1985-88 (Table 20-10). The number of hunts per hunter and harvest per hunt increased slightly. Most squirrel hunting occurred in the southern Lower Peninsula, but success on a per hunt basis was highest in the northern Lower Peninsula.

Between 1979 and 1988, the number of squirrel hunters decreased 35% and the number of hunts decreased 21%. However, the number of hunts per hunter increased 23% and harvest per hunt increased 43%.

Waterfowl Hunting

To hunt ducks and geese in Michigan a hunter must purchase one of the basic licenses described above for small game and also state and federal waterfowl stamps if he or she is over age 15. Waterfowl hunting also has some important differences in regulations compared to small game hunting. Waterfowl hunting regulations are set within a framework established by the federal government, whereas regulations for small and big game are set solely by individual states. The federal government's legal role in regulating waterfowl hunting and harvest derives from treaties with Canada and Mexico pertaining to the management of migratory birds. Some waterfowl hunted in Michigan are born in Canada, migrate through Michigan and other states to the Gulf of Mexico, and fly across the Gulf to winter in Mexico.

Waterfowl hunting is also unique in that regulations are often oriented to individual species rather than to all ducks or geese. For example, in 1979 a hunter was allowed to take 10 bluewinged teal a day. During that same year, a hunter could take only one canvasback per day, and once that canvasback was taken, no other ducks could be taken that day. By 1988 the regulations were much more restrictive and a Michigan hunter could take no more than three ducks, of which two could be wood ducks, two could be mallards (only one of which could be female), one could be a black duck, one a pintail, and one a redhead. No canvasbacks could be taken. With over 20 species of ducks visiting Michigan during the hunting season and regulations requiring the identification of a duck in the air before shooting, duck hunters need a higher level of identification skill and a grasp of more complex regulations than any other type of hunter.

Table 20-9. Statistics on snowshoe hare hunting in Michigan by MDNR region, 1985-88.

	1985	1986	1987	1988[a]
Potential hunters[b]	448,363	447,757	448,175	443,216
Actual hunters				
UP	14,400	17,570	17,930	21,210
NLP	37,020	42,730	45,420	41,240
SLP	4,760	5,280	5,500	5,490
Total	56,180	65,580	68,850	67,940
Percentage of potential hunters that hunted	12	15	15	15
Total hunts				
UP	130,990	184,400	156,780	223,980
NLP	308,100	320,190	358,650	346,050
SLP	19,140	39,810	47,450	57,960
Total	458,230	544,400	562,880	627,990
Hunts/hunter				
UP	9.1	10.5	8.7	10.6
NLP	8.3	7.5	7.9	8.4
SLP	4.0	7.5	8.6	10.6
Total	8.2	8.3	8.2	9.2
Harvest				
UP	71,430	126,820	98,440	197,320
NLP	149,770	144,150	177,360	194,670
SLP	6,320	7,410	7,080	15,270
Total	227,520	278,380	282,880	407,260
Harvest/hunt				
UP	.54	.69	.63	.88
NLP	.49	.45	.49	.56
SLP	.33	.19	.15	.26
Total	.50	.51	.50	.65

[a] The MDNR administrative boundary between the northern Lower Peninsula and the southern Lower Peninsula changed in 1988. Statistics in this column reflect this change. See Figure 20-1.

[b] Potential hunters include those who purchased any of the following licenses: resident small game, nonresident small game, 3-day nonresident small game, resident junior small game, sportsperson or senior hunt.

SOURCE: Reis, T. 1989. "Hunting Results, Michigan Small Game Hunting Seasons, 1988." Michigan Department of Natural Resources Wildlife Division Report No. 3112. Lansing, MI: Michigan Department of Natural Resources.

Table 20-10. Statistics on squirrel hunting in Michigan by MDNR region, 1985-88.

	1985	1986	1987	1988[a]
Potential hunters[b]	448,363	447,757	448,175	443,216
Actual hunters				
UP	7,950	7,120	5,660	7,000
NLP	49,500	49,010	51,350	47,260
SLP	101,480	94,370	99,930	87,660
Total	158,930	150,500	156,940	141,920
Percentage of potential hunters that hunted	35	34	35	32
Total hunts				
UP	68,830	69,450	52,450	85,570
NLP	383,550	353,930	424,410	354,230
SLP	766,840	779,310	763,260	709,530
Total	1,219,220	1,202,690	1,240,120	1,149,330
Hunts/hunter				
UP	8.6	9.8	9.3	12.2
NLP	7.7	7.2	8.3	7.5
SLP	7.6	8.2	7.6	8.1
Total	7.7	8.0	7.9	8.1
Harvest				
UP	56,590	43,330	39,550	51,360
NLP	324,910	297,360	418,570	329,170
SLP	551,740	571,570	618,080	577,700
Total	933,240	912,260	1,076,200	958,230
Harvest/hunt				
UP	.82	.62	.75	.60
NLP	.85	.84	.99	.93
SLP	.72	.73	.81	.81
Total	.76	.76	.87	.83

[a] The MDNR administrative boundary between the northern Lower Peninsula and the southern Lower Peninsula changed in 1988. Statistics in this column reflect this change. See Figure 20-1.

[b] Potential hunters includes those who purchased any of the following licenses: resident small game; non-resident small game; 3-day non-resident small game; resident junior small game; sportsperson; or senior hunt.

SOURCE: Reis, T. 1989. "Hunting Results, Michigan Small Game Hunting Seasons, 1988." Michigan Department of Natural Resources Wildlife Division, Report No.3112. Lansing, MI: Michigan Department of Natural Resources.

Duck Hunting

Whereas the hunting seasons for the small game discussed above typically open and close on the same date each year, the opening and closing days of duck hunting seasons are subject to change annually. During 1985-88, the length of the season for ducks decreased from 40 to 30 days. In addition, the bag limit for ducks decreased and shifted from a point system to a "straight" bag limit where the limit was three ducks and fewer or none of certain species could be included among these three. Non-toxic shot regulations were also more broadly implemented.

The number of duck hunters declined slightly during 1985-88 (Table 20-11). Total hunts and the average number of hunts per hunter also decreased, and harvest decreased substantially. These trends are not surprising in view of the significant decrease in the length of hunting seasons and reduced bag limits. Harvest per hunt remained essentially unchanged. Duck hunters were more likely to be successful on a harvest per hunt basis than small game hunters.

Regionally, the least change in duck hunting occurred in the Upper Peninsula. Success on a per hunt basis was highest in the northern Lower Peninsula throughout the period.

Between 1979 and 1988, substantial declines in almost all categories of duck hunting occurred. Duck hunts dropped 46%, duck hunters decreased 43%, harvest decreased 45%, and hunts per hunter decreased 5%. Harvest per hunt, however, remained relatively constant in spite of declining duck populations. This suggests that those who continued duck hunting may have been the most dedicated and skilled hunters, especially since a study of current and former waterfowl hunters found that dropouts were casual hunters who tended to be less successful and less active in waterfowl hunting (Nelson, et. al., 1986).

Goose Hunting

Goose hunting opportunities improved during 1985-88. The populations of geese that migrate through Michigan between breeding grounds in Canada and wintering areas farther south steadily increased to record levels. Populations of Giant Canada geese, which breed and spend much of the year in Michigan, also climbed to record levels. MDNR research suggests that over the past 30 years the fall population of these birds in the southern Lower Peninsula increased about 1,000% from 7,500 to over 80,000 geese as a result of this species adapting better than other waterfowl to management and human alterations of the environment (personal communication, Gerald Martz). Unlike most other waterfowl, many of these birds winter in Michigan, leaving only under the severest conditions. During the summer, interactions between waterfront homeowners and geese have resulted in hundreds of nuisance complaints annually to the MDNR about decimated gardens, goose droppings on beaches, etc. To increase recreation opportunities and to control the populations of these birds an early fall season has been added to the existing winter season to harvest local Giant Canada geese when migrating geese from Canada are not present in significant numbers. Because the Giants have established significant breeding populations in other parts of the state, much of Michigan now has an early fall season.

Reliable estimates of the total goose hunter population are not available. The harvest of geese during 1985-88 steadily increased as more hunting opportunities became available as a result of increased season days, bag limits, and goose populations (Table 20-12). The number of hunts rose moderately, while harvest per hunt increased markedly. While harvest increased throughout the state, the majority of harvest and hunting effort occurred in southern Lower Michigan, where seasons have been the longest and the population of waterfowl stamp

Table 20-11. Statistics on duck hunting in Michigan by MDNR region, 1985-88.

	1985	1986	1987	1988[a]
Potential hunters[b]	448,363	447,757	448,175	443,216
Actual hunters				
UP	5,890	7,500	5,840	5,460
NLP	15,680	16,150	15,960	13,130
SLP	28,870	27,230	24,140	23,790
Total	50,440	50,880	45,940	42,380
Percentage of potential hunters that hunted	11	11	10	10
Total hunts				
UP	42,970	58,410	32,280	36,390
NLP	130,710	132,490	140,240	97,690
SLP	217,610	207,870	171,990	167,960
Total	391,290	398,770	344,510	302,040
Hunts/hunter				
UP	7.3	7.8	5.5	6.7
NLP	8.3	8.2	8.8	7.4
SLP	7.5	7.6	7.1	7.1
Total	7.8	7.8	7.5	7.1
Harvest				
UP	33,410	47,520	25,280	32,110
NLP	168,470	138,170	160,940	101,770
SLP	161,400	155,790	129,440	135,570
Total	363,280	341,480	315,660	269,450
Harvest/hunt				
UP	.78	.81	.78	.88
NLP	1.29	1.04	1.15	1.04
SLP	.74	.75	.75	.81
Total	.93	.86	.92	.89

[a] The MDNR administrative boundary between the northern Lower Peninsula and the southern Lower Peninsula changed in 1988. Statistics in this column reflect this change. See Figure 20-1.

[b] Potential hunters includes those who purchased any of the following licenses: resident small game; non-resident small game; 3-day non-resident small game; resident junior small game; sportsperson; or senior hunt.

SOURCE: Reis, T. 1989. "Hunting Results, Michigan Small Game Hunting Seasons, 1988." Michigan Department of Natural Resources Wildlife Division, Report No. 3112. Lansing, MI: Michigan Department of Natural Resources.

Table 20-12. Statistics on goose hunting in Michigan by MDNR region, 1985-88.

	1985	1986	1987	1988[a]
Potential hunters[b]	---	---	---	---
Actual hunters				
UP	N.A.	N.A.	N.A.	N.A.
NLP	N.A.	N.A.	N.A.	N.A.
SLP	N.A.	N.A.	N.A.	N.A.
Total	N.A.	N.A.	N.A.	N.A.
Percentage of potential hunters that hunted	N.A.	N.A.	N.A.	N.A.
Total hunts				
UP	36,300	46,140	31,920	39,510
NLP	90,860	104,220	116,830	69,320
SLP	196,550	179,250	173,000	221,770
Total	323,710	329,610	321,750	330,600
Hunts/hunter				
UP	N.A.	N.A.	N.A.	N.A.
NLP	N.A.	N.A.	N.A.	N.A.
SLP	N.A.	N.A.	N.A.	N.A.
Total	N.A.	N.A.	N.A.	N.A.
Harvest				
UP	10,420	16,730	12,460	15,640
NLP	24,340	20,940	43,980	26,970
SLP	38,620	40,460	47,080	79,400
Total	73,380	78,130	103,520	122,010
Harvest/hunt				
UP	.29	.36	.39	.40
NLP	.27	.20	.38	.39
SLP	.20	.22	.27	.36
Total	.23	.24	.32	.37

[a] The MDNR administrative boundary between the northern Lower Peninsula and the southern Lower Peninsula changed in 1988. Statistics in this column reflect this change. See Figure 20-1.

[b] Potential hunters includes those who purchased any of the following licenses: resident small game; non-resident small game; 3-day non-resident small game; resident junior small game; sportsperson; or senior hunt.

SOURCE: Reis, T. 1989. "Hunting Results, Michigan Small Game Hunting Seasons, 1988." Michigan Department of Natural Resources, Wildlife Division Report No. 3112. Lansing, MI: Michigan Department of Natural Resources.

purchasers the greatest.

The long term trend in goose hunting and goose populations appears to be very positive. Between 1979 and 1988 the number of hunts rose 4%, while harvest rose 113% and success per hunt rose 106%.

Big Game Hunting

Big game species in Michigan include whitetailed deer, black bear, elk, and wild turkey. While the basic seasons for deer (firearm and archery) did not change during 1985-88, the legal bag limit for deer rose substantially. In 1988 and 1989, a hunter could legally harvest three deer with a gun and two deer with a bow. This was possible since many hunters were awarded bonus antlerless deer tags to encourage additional harvest of antlerless deer, in addition to having four deer licenses available to each hunter. A hunter could also harvest additional deer on North Manitou Island and the Fox Islands.

Black bear hunting seasons have not differed significantly in recent years, although in 1981 and 1985 bear hunting was not allowed during the firearm deer season in the Upper Peninsula.

Elk hunting occurs in the Pigeon River Country Forest Area bounded by the cities of Gaylord, Indian River, Onaway, and Atlanta. In recent years elk have been hunted in this area in a highly regulated hunt designed to result in a winter herd of about 850 animals. Thousands of people apply for this hunt and very few are chosen. In 1990, the winter elk population was estimated to be 980 individuals, and the herd has been expanding its range beyond the dedicated boundaries of the Pigeon River Country Forest Area, resulting in conflicts with farmers and other landowners (personal communication, Edward Langenau).

Regular Firearm Deer Hunting

Regular firearm deer hunting in Michigan occurs annually from November 15 to November 30. Opportunities to participate in this type of hunting in Michigan have steadily improved since the early 1970s. Between 1972 and 1989, the estimated deer population rose over 300%, from about 450,000 to 2 million animals, despite liberalized harvest regulations (personal communication, Edward Langenau).

Firearm deer license sales increased substantially during 1985-88. However, the number of hunts decreased slightly, possibly because many hunters filled all the licenses they desired in fewer hunts, as suggested by the 57% increase in harvest per hunt (Table 20-13). The total harvest of deer during the regular firearm season rose, with the harvest of antlerless deer rising at a more rapid rate than the harvest of bucks. Record harvests were set with each successive year of the period. The percentage of hunters bagging one or more deer during the regular firearm season also increased steadily during 1985-88.

Hunting activity was slightly higher in the northern Lower Peninsula than in the southern Lower Peninsula. Harvest per hunt was higher in the Upper Peninsula and the northern Lower Peninsula than in the southern Lower Peninsula.

Between 1979 and 1988, the number of hunts increased only 1%. However, the harvest of bucks increased 105%, the harvest of antlerless deer increased 296%, and the percentage of hunters bagging one or more deer increased 100%.

Table 20-13. Statistics on regular firearm deer hunting in Michigan by MDNR region, 1985-88.

	1985	1986	1987	1988[a]
License sales[b]	762,165	859,258	891,623	882,532
Total hunts				
UP	876,180	815,550	817,690	817,190
NLP	2,372,590	2,384,150	2,352,690	2,267,790
SLP	1,958,140	1,976,090	1,853,860	1,961,510
Total	5,206,910	5,175,790	5,024,240	5,046,490
Buck harvest				
UP	31,110	31,240	43,690	43,200
NLP	74,930	86,020	85,160	86,070
SLP	40,360	47,740	56,790	57,990
Total	146,400	165,000	185,640	187,260
Antlerless harvest				
UP	5,560	3,520	7,260	8,460
NLP	22,680	21,000	35,510	55,650
SLP	17,790	23,230	29,140	42,940
Total	46,030	47,750	71,910	107,050
Total harvest				
UP	36,670	34,760	50,950	51,660
NLP	97,610	107,020	120,670	141,720
SLP	58,150	70,970	85,930	100,930
Total	192,430	212,750	257,550	294,310
Harvest/100 hunts				
UP	4.2	4.3	6.2	6.3
NLP	4.1	4.5	5.1	6.2
SLP	3.0	3.6	4.6	5.1
Total	3.7	4.1	5.1	5.8
Percentage of hunters bagging at least one deer	27	28	32	34

[a] The MDNR administrative boundary between the northern Lower Peninsula and the southern Lower Peninsula changed in 1988. Statistics in this column reflect this change. See Figure 20-1.

[b] Sales of senior hunt, resident deer, nonresident deer, and sportsperson licenses.

SOURCE: Reis, Tim F. n.d. "Michigan Deer Seasons, 1988." Michigan Department of Natural Resources, Wildlife Division Report No. 3115. Lansing, MI: Michigan Department of Natural Resources.

Archery Deer Hunting

Archery deer hunting in Michigan occurs annually from October 1 to November 14 and from December 1 to January 1. Opportunities to participate in this type of hunting have increased with increases in the state's deer herd.

The antlered buck harvest by archers more than doubled during 1985-88 (Table 20-14). Harvests of antlerless deer also rose, although at a much lower rate. Harvest per hunt also increased. The success rates of archers during the period rivaled or exceeded that of firearm hunters less than a decade ago, with almost 25% of the archers bagging one or more deer in 1988.

Hunters were most successful in the Upper Peninsula and least successful in the southern Lower Peninsula. However, in every region hunting success increased. Most archery hunting effort occurred in the southern Lower Peninsula, whereas most firearm hunting effort occurred in the northern Lower Peninsula.

Between 1979 and 1988, archers experienced significant increases in hunting success, with the proportion of successful hunters bagging one or more deer increasing 100%. Hunts increased 34% and harvest increased 181%.

Muzzleloader Deer Hunting

The muzzleloader deer season, which occurs in December, provides another opportunity for firearm hunters to take deer. This type of hunting has rapidly increased in popularity. Between 1985 and 1988, the number of muzzleloader deer hunts increased over 100%, making it the fastest growing type of deer hunting in Michigan (Table 20-15).

In 1988, success at muzzleloader hunting was slightly less than that of archery hunting, with about one out of every six hunters bagging a deer. However, one should keep in mind that muzzleloaders hunted deer that had eluded regular firearm and archery hunters, and still managed to bag over 17,000 deer. Between 1985 and 1988 the harvest of deer by muzzleloader hunters nearly quadrupled, even though hunting effort only doubled.

Most muzzleloader hunting occurred in southern Lower Michigan. On a harvest per hunt basis, muzzleloader hunters were likely to be more successful than archers and less successful than regular firearm hunters in all regions.

Bear Hunting

Bear hunting in Michigan occurs during three brief seasons in the Upper Peninsula and the northern Lower Peninsula prior to the firearm deer season. It is also permitted during the firearm deer season in the Upper Peninsula.

The bear harvest during 1979-83 is shown in Table 20-16. Other aspects of bear hunting were studied during only the 1982 and 1983 seasons. It is important to note the different methods employed to estimate bear harvest. Prior to 1982, all bear kills had to be registered with the MDNR. Experience with this system suggests that it probably resulted in underestimates of bear harvest (personal communication, Harry Hill). The survey research more recently used to estimate harvest is considered more liberal. Thus the apparent increase in harvest may not be as great as the statistics in the table suggest.

Table 20-14. Statistics on archery deer hunting in Michigan by MDNR region, 1985-88.

	1985	1986	1987	1988[a]
License sales[b]	305,409	340,627	366,431	389,075
Total hunts				
UP	242,650	255,280	292,630	292,870
NLP	1,557,220	1,732,150	1,871,460	1,940,020
SLP	1,657,610	1,845,210	2,017,460	2,076,330
Total	3,457,480	3,832,640	4,181,550	4,309,220
Buck harvest				
UP	2,730	3,130	4,680	5,320
NLP	11,580	18,080	19,960	22,190
SLP	6,660	10,190	13,240	14,520
Total	20,970	31,400	37,880	42,030
Anterless harvest				
UP	3,210	2,650	4,000	3,740
NLP	12,210	15,280	20,220	17,610
SLP	5,660	8,630	10,720	8,640
Total	21,080	26,560	34,940	29,990
Total harvest				
UP	5,940	5,780	8,680	9,060
NLP	23,790	33,360	40,180	39,800
SLP	12,320	18,820	23,960	23,160
Total	42,050	57,960	72,820	72,020
Harvest/100 hunts				
UP	2.4	2.3	3.0	3.1
NLP	1.5	1.9	2.1	2.0
SLP	0.7	1.0	1.2	1.1
Total	1.2	1.5	1.7	1.7
Percentage of hunters bagging at least one deer	18	23	26	24

[a] The MDNR administrative boundary between the northern Lower Peninsula and the southern Lower Peninsula changed in 1988. Statistics in this column reflect this change. See Figure 20-1.

[b] Sales of senior hunt, resident bow and arrow, resident bow and arrow junior, nonresident bow and arrow, and sportsperson licenses.

SOURCE: Reis, Tim F. n.d. "Michigan Deer Seasons, 1988." Michigan Department of Natural Resources, Wildlife Division Report No. 3115. Lansing, MI: Michigan Department of Natural Resources.

Table 20-15. Statistics on muzzleloader deer hunting in Michigan by MDNR region, 1985-88.

	1985	1986	1987	1988[a]
License sales[b]	762,165	859,258	891,623	882,532
Total hunts				
UP	20,040	31,550	38,140	49,070
NLP	84,520	100,380	142,820	177,370
SLP	120,850	157,730	183,360	226,560
Total	225,410	289,660	364,320	453,000
Buck harvest				
UP	1,000	470	990	1,150
NLP	830	2,090	1,750	3,290
SLP	940	1,810	1,770	3,940
Total	2,770	4,370	4,510	8,380
Anterless harvest				
UP	80	70	130	580
NLP	1,180	960	1,880	4,670
SLP	910	1,110	1,790	3,830
Total	2,170	2,140	3,800	9,080
Total harvest				
UP	1,080	540	1,120	1,730
NLP	2,010	3,050	3,630	7,960
SLP	1,850	2,920	3,560	7,770
Total	4,940	6,510	8,310	17,460
Harvest/100 hunts				
UP	5.4	1.7	2.9	3.5
NLP	2.4	3.0	2.5	4.5
SLP	1.5	1.9	1.9	3.4
Total	2.2	2.2	2.3	3.8
Percentage of hunters bagging at least one deer	10	11	10	16

[a] The MDNR administrative boundary between the northern Lower Peninsula and the southern Lower Peninsula changed in 1988. Statistics in this column reflect this change. See Figure 20-1.

[b] Sales of senior hunt, resident deer, nonresident deer, and sportsperson licenses.

SOURCE: Reis, Tim F. n.d. "Michigan Deer Seasons, 1988." Michigan Department of Natural Resources, Wildlife Division Report No. 3115. Lansing, MI: Michigan Department of Natural Resources.

Table 20-16. Statistics on bear hunting in Michigan, 1979-83.

	1979	1980	1981	1982	1983
Bear only seasons hunters	N.A.	N.A.	N.A.	9,815	10,193
Bear/deer hunters in UP	N.A.	N.A.	N.A.	1,741	1,651
Bear only hunts	N.A.	N.A.	N.A.	81,118	47,241
Bear/deer hunts	N.A.	N.A.	N.A.	16,082	12,333
Bear only hunts/hunter	N.A.	N.A.	N.A.	8.3	4.6
Bear/deer hunts/hunter	N.A.	N.A.	N.A.	9.2	7.5
Bear only harvest	754	857	939	1,494	1,355
Bear/deer harvest	154	62	---	12	36
Bear only success	N.A.	N.A.	N.A.	15.2%	13.3%
Bear/deer success	N.A.	N.A.	N.A.	0.7%	2.2%

NOTE: Bear hunting was not permitted during the 1981 deer season.

SOURCE: Hill, H. 1985. "Michigan Bear Kill Estimates." Michigan Department of Natural Resources, Wildlife Division Report No. 3002.

Wild Turkey Hunting

Turkey hunting, like early fall and winter goose hunting, has been available in Michigan only recently. It began at very limited locations in 1965 and has been offered at an increasing number of locations in succeeding years. Modern turkey populations in Michigan started with the release of turkeys from other states. These releases have continued recently in southern Lower Michigan, with an emphasis on only releasing wild-trapped birds taken from flocks in other states with no known game-farm origins. Recently, turkey seasons were held in several southern Michigan areas for the first time in modern history.

Turkey hunting is more heavily regulated than most other types of hunting. All hunting permits are granted by the MDNR using a lottery system. Hunters are also segmented by a hunting zone and hunting period during the turkey season. Since only one male turkey per hunter may be taken, Table 20-17 describes success in terms of a turkey harvested rather than on a harvest per hunt basis.

During 1986-89, many changes in turkey hunting opportunities occurred which require caution in interpreting the table. Each year the area open to hunting increased, which contributed significantly to the increased harvest. Moreover, the number of hunters reflects the number of permits available as well as interest in turkey hunting. Of the permits issued, the proportion actually hunting steadily increased. The harvest increased significantly over the period, as did hunter success, although at a more moderate rate. Hunts per hunter remained static.

Turkey seasons, unlike other hunting seasons, generally occur in the spring rather than the fall. However, during 1988 and 1989, special fall seasons were held to reduce turkey populations in two areas. In 1988 a fall hunt in Menominee County which allowed the taking of a female turkey was conducted to reduce a burgeoning turkey population there. This hunt had an excellent success rate of 58% (personal communication, Tim Reis). And in 1989, a fall hunt in Allegan County was conducted to reduce a population of turkeys with suspected game farm origins that had failed to prosper over the past 30 years. The area is being restocked with wild-trapped birds from flocks without game farm ancestry. No statistics are available on that hunt.

The northern Lower Peninsula has been the cornerstone of the turkey flock and hunting effort. This is likely to continue into the mid-90s, although southern Lower Michigan, with more mast-producing trees and an abundance of agricultural food, may supplant northern areas as the highest quality turkey habitat.

Between 1981 and 1989, turkey populations and turkey hunting opportunities and participation increased steadily. The number of hunters increased 96%, the number of hunts increased 145%, and harvest increased 378%. The future of turkey hunting in Michigan looks bright, and discussions have begun about easing restrictions on this type of hunting.

Trapping

The trapping of furbearing animals is another form of wildlife recreation. Trapping opportunities in Michigan fluctuate with both the populations of furbearers and the dates selected for seasons. No definitive studies have recently been conducted to estimate the populations of furbearers in the state. In recent years, slightly longer trapping seasons have been established for commonly trapped species such as muskrat, raccoon, mink, beaver, and otter. Restrictions have been placed on the trapping of red and gray fox by shifting their status from unprotected animals (which can be hunted or trapped year-round) to game species

Table 20-17. Statistics on spring turkey hunting in Michigan by MDNR region, 1985-89.

	1985	1986	1987	1988	1989
Permits issued	15,010	16,039	16,696	20,107	24,849
Actual hunters					
UP	484	609	884	1,100	1,656
NLP	11,117	12,116	13,144	16,120	19,558
SLP	381	312	350	433	985
Total	11,982	13,037	14,378	17,653	22,199
Percentage of permittees that hunted	80	81	86	88	89
Total hunts					
UP	1,689	2,005	3,115	4,058	5,643
NLP	44,936	46,951	53,449	64,985	77,692
SLP	1,426	1,445	1,550	1,787	3,900
Total	48,051	50,451	50,114	70,830	87,235
Hunts/hunter					
UP	3.5	3.3	3.5	3.7	3.4
NLP	4.0	3.9	4.1	4.0	4.0
SLP	3.7	4.6	4.4	4.1	4.0
Total	4.0	3.9	3.5	4.0	3.9
Harvest					
UP	144	146	334	393	709
NLP	1,835	2,171	2,883	4,136	5,352
SLP	37	44	43	38	134
Total	2,016	2,361	3,260	4,567	6,195
Percentage of successful hunters					
UP	30	24	38	36	43
NLP	16	18	22	26	27
SLP	10	14	12	9	14
Total	17	18	23	26	28

SOURCE: Reis, Tim F. 1989. "Hunting Results, Michigan Spring Turkey Season, 1989." Michigan Department of Natural Resources, Wildlife Division Report No. 3111. Lansing, MI: Michigan Department of Natural Resources.

with a limited hunting and trapping season.

Interest in trapping appears to be related to the raw fur prices trappers receive for pelts as well as opportunities to participate in this activity. When higher prices can be obtained, much more trapping occurs and somewhat more animals are caught. However, even in years of relatively lower prices, many people continue to trap.

Trapping activity in Michigan between 1981-82 and 1983-84 is portrayed in Table 20-18.[5] As shown therein, muskrats were the most valuable species taken by trappers in terms of total value, and were also the most commonly harvested. Red fox and raccoon were the most commonly harvested higher-value species.

Over the three seasons the number of furbearers harvested decreased. This may have largely resulted from a price drop from the 1981-82 season to the 1982-83 season, since the number of licensed trappers between the 1981-82 season and the 1983-84 season fell 39%. The average amount received for pelts fell from $622 in 1981-82 to $376 in 1982-83 and rose to $530 in 1983-84 (Reis and Hill, 1985).

Economic Value of Hunting

Four indicators of the economic value of hunting in Michigan are presented below: (1) estimates of the trip-related expenditures of resident and nonresident hunters in Michigan from the 1985 National Survey of Hunting, Fishing, and Wildlife-Associated Recreation (U.S. Fish and Wildlife Service, 1989), (2) estimates of the expenditures of Michigan residents for hunting in Michigan and other states from the same survey, (3) the estimated potential meat value of game harvested in Michigan, and (4) the estimated potential value of furs and hides from game animals harvested in Michigan.

Trip-related Spending in Michigan by Residents and Nonresidents

Information on the trip-related expenditures of hunters is especially useful for purposes of this book since such expenditures directly contribute to the sales revenues of Michigan's travel and tourism industry. During 1985 residents and nonresidents took an estimated 11.7 million hunting trips in Michigan and made trip-related expenditures that totaled about $166 million. An estimated 57% of these trip-related expenditures were on food and lodging, 41% were on transportation, and 2% were on equipment rentals and fees for guides, pack trips, and public and private land use. Residents accounted for 93% of these expenditures and nonresidents accounted for only 7% (U.S. Fish and Wildlife Service, 1989:29). Resident and nonresident hunters spent more on trip-related expenditures in Michigan than in any other state except Texas, California, or Pennsylvania (U.S. Fish and Wildlife Service, 1989:56).

Overall Spending by Michigan Residents in Michigan and Other States

This section presents information on trip-related and other expenditures on hunting (such as equipment), broken down by type of purchase and type of game sought. The figures presented pertain to the expenditures in Michigan *and other states* of Michigan residents age 16 and older. For purposes of this book it would be preferable if the figures pertained to the expenditures of residents *and nonresidents* in Michigan *alone*, as was the case with the strictly trip-related expenditures reported above. However, the figures reported below closely

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[5] More recent studies on this subject have not been conducted.

Table 20-18. Size and value of furbearer harvest by Michigan trappers, 1981-84.

Species	NUMBER OF ANIMALS TRAPPED			ESTIMATED AVG. PELT VALUE			ESTIMATED TOTAL HARVEST VALUE		
	'81-'82	'82-'83	'83-'84	'81-'82	'82-'83	'83-'84	'81-'82[a]	'82-'83[b]	'83-'84[b]
Muskrat	756,820	551,047	487,270	$ 4.87	$ 2.65	$ 3.38	$3,685,713	$1,460,275	$1,646,973
Red Fox	33,690	26,595	26,673	54.00	31.65	33.94	1,819,260	841,732	905,282
Raccoon	69,910	72,853	61,927	21.67	15.66	13.54	1,514,950	1,140,878	838,491
Mink	40,770	24,121	23,295	19.91	14.53	18.06	811,731	350,478	420,708
Beaver	14,150	18,887	26,952	14.72	12.70	14.02	208,288	239,864	377,867
Opossum	45,070	39,597	49,092	1.70	2.00	1.81	76,619	79,194	88,856
Coyote	7,670	3,492	3,538	39.00	23.18	20.00	299,130	80,945	70,760
Skunk	36,740	24,332	22,691	2.34	2.20	3.00	85,972	53,530	68,073
Gray Fox	3,550	1,197	1,754	23.00	26.78	29.85	81,650	32,056	52,357
Bobcat	340	540	552	72.00	66.50	49.33	24,480	35,910	27,230
Otter	550	1,421	563	32.00	26.96	29.82	17,600	38,310	16,789
Weasel	2,890	1,507	2,540	0.70	1.60	1.71	2,023	2,411	4,343
Total	1,012,150	765,589	706,847	---	---	---	$8,627,416	$4,355,583	$4,517,729

[a] From Michigan Fur Auction records.

[b] Based on mail survey data.

SOURCE: Reis, T. and H. Hill. 1985. "Michigan Furbearer Catch by Trappers, 1983-84." Michigan Department of Natural Resources Wildlife Division Report No. 2995.

approximate this situation since residents accounted for 97% of all hunting days that took place in Michigan and 97% of the hunting days of Michigan residents took place in Michigan (U.S. Fish and Wildlife Service, 1989:19).

Michigan residents 16 years old and older spent an estimated total of $440,310,800 in Michigan and other states for hunting in 1985 (Table 20-19). The highest percentage of this spending was for equipment purchased primarily for hunting. Such expenditures accounted for $207,947,000, or 47% of the total amount spent by Michigan residents in 1985. Most of these equipment expenditures ($139,550,200) were for such items as guns and ammunition, while a lesser amount ($68,396,800) was for special and auxiliary equipment, i.e., items such as tents, campers, and boats purchased primarily for hunting but which could be used for other activities. Trip-related expenditures for food and lodging, transportation, and other items such as equipment rental and boat fuel totaled $172,818,800, or 39% of all hunting expenditures. Purchases of licenses, stamps, tags, and permits amounted to $18,808,600, or 4% of all hunting expenditures. Expenditures for other items purchased primarily for hunting (magazines, membership dues and contributions, and land leasing/ownership) totaled $40,736,500, or 9% of all hunting expenditures.

The bulk of the estimated $440 million spent by Michigan residents on hunting in Michigan and in other states was spent on big game hunting. As Table 20-20 illustrates, expenditures by Michigan residents on big game hunting amounted to an estimated $302 million, while those on small game hunting amounted to only about $90 million, those on migratory bird hunting amounted to only about $16 million, and those on hunting for other species amounted to only about $4 million.

Value of Game Meat

The estimated potential meat value of game harvested during the 1982 hunting/trapping season is shown in Table 20-21.[6] Unless otherwise noted, meat was valued as the equivalent of ground round steak at $1.66 per pound. Venison provided 70% of the total meat value of the wildlife harvested. Cottontails, squirrels, and raccoons were the only other species that provided over $1 million worth of meat.

Value of Furs and Hides

The estimated potential value of furs and hides sold in 1982 is shown in Table 20-22.[6] Dollar values per pelt were based on prices reported at fur sales in Michigan between the fall of 1982 and the spring of 1983. It should be noted that such prices tend to fluctuate radically and so may be quite different now than what they were in 1982-83. For example, in 1982 prices for the most commonly trapped furbearer, the muskrat, were nearly half those obtained in 1981 (Reis and Hill, 1985). In 1982, raccoon pelts accounted for the largest proportion of the total value of furs and hides.

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[6] More recent studies on this subject have not been conducted.

Table 20-19. Estimated expenditures in the U.S. by Michigan residents for hunting, 1985.

EXPENDITURE ITEM	EXPENDITURES			SPENDERS		
	Amount	Percent New[1]	Avg. Per Hunter	Number	Pct. of Hunters	Avg. Per Spender
TRIP-RELATED EXPENDITURES						
Food	$ 83,717,300	N.A.	$ 95	659,100	75	$127
Lodging	13,337,600	N.A.	15	101,200	12	132
Transportation	68,738,400	N.A.	78	758,200	86	91
Other[2]	7,025,700	N.A.	8	187,100	21	38
Total	$172,818,800	N.A.	$196	809,000	92	$214
EQUIPMENT AND OTHER EXPENDITURES PRIMARILY FOR HUNTING						
HUNTING EQUIPMENT						
Guns and rifles	$ 78,694,400	81	$ 89	209,300	24	$376
Ammunition	12,627,400	98	14	480,400	55	26
Other[3]	48,228,500	91	55	325,200	37	148
Total	$139,550,200	86	$159	599,100	68	$233
AUXILIARY EQUIPMENT	$ 44,307,200	95	$ 50	430,500	49	$103
SPECIAL EQUIPMENT	$ 24,089,600*	N.A.	$ 27*	32,800*	4*	$736*
LICENSES, STAMPS, TAGS AND PERMITS						
Licenses	$ 17,459,300	N.A.	$ 20	849,300	97	$ 21
Federal duck stamps	564,000	N.A.	1	75,200	9	8
Other stamps, tags and permits	785,500	N.A.	1	121,100	14	6
Total	$ 18,808,600	N.A.	$ 21	857,200	97	$ 22
OTHER HUNTING COSTS[4]	$ 40,736,500	N.A.	$ 46	100,000	11	$407
GRAND TOTAL	$440,310,800	N.A.	$501	876,300	100	$502

NOTE: Details may not add to totals because of nonresponse and multiple responses. Includes expenditures by state residents in other states.

[1] Percent of equipment expenditures for new rather than used items.

[2] Includes equipment rental (boats, camping equipment, etc.) and fees for guides, pack trips, public land use, and private land use.

[3] Includes bows, arrows, archery equipment, telescopic sights, decoys and game calls, equipment or game cases or carriers, handloading equipment, hunting dogs, hunting knives, and other unspecified equipment.

[4] Includes magazine subscriptions, membership dues and contributions, and land leasing and ownership.

*Estimate based on a small size.

SOURCE: U.S. Fish and Wildlife Service. 1989. 1985 National Survey of Fishing, Hunting and Wildlife Associated Recreation: Michigan. Washington, D.C.: U.S. Fish and Wildlife Service. Table 20.

Table 20-20. Estimated participation in and expenditures on hunting in Michigan or other states, by type of game, 1985.

TYPE OF HUNTING	HUNTING BY MICHIGAN RESIDENTS IN MICHIGAN OR OTHER STATES				HUNTING BY MICHIGAN RESIDENTS OR NONRESIDENTS IN MICHIGAN ONLY	
	Number of Participants	Days of Hunting	Spending Per Day	Total Spending	Number of Participants	Days of Hunting
Big game[1]	796,300	7,604,900	$39.67	$301,675,400	835,000	7,481,600
Small game[2]	479,000	6,504,000	13.84	90,013,300	502,500	6,546,500
Migratory birds[3]	119,500	734,000	21.12	15,503,200	130,500	747,300
Other animals[4]	71,000	779,700	5.53	4,315,500	70,000	759,800
Total	879,600	14,995,300	$29.36	$440,310,800	943,100	14,907,500

NOTE: Details may not add to totals due to nonresponse and multiple responses.

[1] Includes deer, bear, and turkey.

[2] Includes rabbit, snowshoe hare, grouse, quail, squirrel, and pheasant.

[3] Includes geese, ducks, and woodcock.

[4] Includes all other species legally hunted, such as woodchuck, raccoon, fox, and coyote.

SOURCE: U.S. Fish and Wildlife Service. 1989. 1985 National Survey of Fishing, Hunting and Wildlife-Associated Recreation: Michigan. Washington, D.C.: U.S. Fish and Wildlife Service. Tables 10, 11, and 18.

Table 20-21. Potential meat value of 1982 hunter-trapper harvest in Michigan.

Species	Harvest	Avg. Weight Dressed Meat	Total Weight (lbs.)	Dollar Value
Deer	202,560	60 lb.	12,153,600	$20,174,976
Cottontail	852,980	1 1/3 lb.	1,134,463	1,883,209
Squirrel	783,710	1 lb.	783,710	1,300,959
Raccoon	279,510	7 lbs. @ .60/lb.	1,956,570	1,173,942
Ruffed Grouse	522,140	1 lb.	522,140	866,752
Pheasant	250,500	2 lb.	501,000	831,660
Snowshoe Hare	313,210	1 1/3 lb.	416,569	691,505
Duck	391,630	1 lb.	391,630	650,106
Geese	57,170	4 lb.	228,680	379,609
Muskrat	551,047	1 lb. @ .50/lb.	551,047	275,523
Bear	1,520	100 lb.	152,000	253,320
Woodcock	258,750	1/4 lb.	64,687	107,381
Opossum	39,597	3 lbs. @ .33/lb.	118,791	39,597
Turkey	1,748	12 lb.	20,976	34,820
Coot	12,320	1 lb.	12,320	20,451
Beaver	18,887	15 lb.	283,305	---
Bobcat	540	10 lb.	5,400	---
Quail	Closed	1/3 lb.	---	---
Total	4,537,819		19,296,888	$28,683,810

SOURCE: Tucker, D. 1984. "1982 Michigan Hunting and Trapping Seasons." Michigan Department of Natural Resources.

Table 20-22. Potential fur/hide value of 1982 hunter-trapper harvest in Michigan.

Species	Harvest	Avg. Value Per Pelt[1]	Dollar Value
Raccoon	279,510	$15.66	$4,377,127
Muskrat	551,047	2.65	1,460,274
Deer	202,560	6.50	1,316,640
Fox	37,280	30.00	1,118,400
Mink	24,121	14.53	350,478
Beaver	18,887	12.70	239,865
Squirrel	783,710	0.15	117,556
Coyote	3,492	23.18	80,945
Opossum	39,597	2.00	79,194
Bear	1,520	52.00	79,040
Skunk	24,332	2.20	53,530
Otter	1,421	26.96	38,310
Bobcat	540	66.50	35,910
Weasel	1,507	1.60	2,411
Snowshoe Hare	313,210	---	---
Cottontail	852,980	---	---
Total	3,135,714		$9,349,680

[1] From Michigan Fur Auction records.

SOURCE: Tucker, D. 1984. "1982 Michigan Hunting and Trapping Seasons." Michigan Department of Natural Resources.

Summary and Conclusion

Participation in hunting has moderately increased since the previous discussion on this subject in the first edition of this book. In particular, hunting for deer and turkey has increased in terms of participation and harvest, in concert with continued growth in the populations of these species. Pheasants appear to have benefitted from mild winters in the late 1980s and favorable federal agricultural regulations, and the Sichuan pheasant program may begin to bear fruit in the 1990s. However, participation in small game hunting is markedly lower than a decade ago, although a revitalized pheasant population may renew interest in this type of hunting. The waterfowl hunting picture is mixed, with continental duck populations and harvests dropping, Canada goose populations and harvests rising to record levels, and the number of waterfowl hunters remaining relatively constant.

Despite opposition to hunting from some sectors of society, it is unlikely that this form of recreation will disappear in the near future. The state has abundant wildlife habitat and state wildlife professionals are authorized to enhance and protect game populations, restore and improve wildlife habitat, and provide outdoor recreation activities such as hunting under Act 17, P.A. 1921. Many private organizations in Michigan also help fund cooperative projects with the MDNR to improve wildlife habitat on public land and private land accessible to the hunting public. Michigan also has laws that protect critical wildlife habitat on public and private lands, such as the Wetlands Act (Act 306, P.A. 1979), the Inland Lakes and Streams Act (Act 346, P.A. 1972), the Great Lakes Submerged Lands Act (Act 247, P.A. 1955), and the Michigan Environmental Protection Act (Act 127, P.A. 1970). In addition, hunting annually attracts nearly a million participants and hunters have numerous organizations to represent their interests. Finally, hunters financially support their programs through license and stamp revenues and taxes paid on sporting arms and ammunition. These programs not only provide the vast majority of funds the state uses to operate game management programs, but also support many efforts to benefit non-game species and much of the state's wildlife law enforcement efforts.

Nevertheless, unlike recreationists such as campers or boaters, who have no active opposition, hunters face politically vocal groups which demand the reduction or elimination of their sport. For example, almost annually bills are introduced into the Legislature to ban many forms of trapping. And recent efforts to establish a mourning dove hunting season were defeated in a court battle over whether the Natural Resources Commission or the Legislature had the legal right to establish such a season. In addition, expanding suburban populations have accelerated the rate of land closures to hunting as farms are subdivided. In particular, an increasing number of townships, in the interest of safety, have closed part or all of their jurisdictions to hunting. Yet in spite of this opposition and the restrictions posed by land closures, the fact that almost three-quarters of a million deer hunters take to the woods and fields of Michigan on November 15 of a given year, and that almost 10 million acres are open to public hunting that day, clearly indicate that hunting is an attractive activity for many Michigan residents as well as nonresidents, and that large acreages are available for it on land open to all.

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CHAPTER 21

WINTER SPORTS IN MICHIGAN

Charles M. Nelson and Daniel M. Spotts

Introduction

Winter sports are an important element of Michigan's travel and tourism system, in part because participation in these sports generates travel activity that serves to mitigate the seasonality of the travel and tourism industry. This chapter discusses three of Michigan's principal winter sports: snowmobiling, downhill skiing, and cross-country skiing. The sections on snowmobiling and downhill skiing are quite brief due to the paucity of current information available about these activities. The section on cross-country is more extensive and summarizes the results of a recent survey of cross-country skiers conducted by MSU (Nelson, 1988a).

Snowmobiling

The best available information on snowmobile registrations in the U.S. indicates that in the spring of 1990 Michigan had about 206,000 registered snowmobiles - more than any other state (Table 21-1). The distribution of registered snowmobiles by Michigan county as of the end of 1990 is shown in Table 21-2. Useful baseline information on the characteristics of snowmobile owners in Michigan may be found in Szcodronski (1978).

Downhill Skiing

According to Enzel (1990), in 1990 Michigan had 44 downhill ski areas, more than any other state except New York (Table 21-3). In 1990 the average downhill ski area in Michigan had a vertical drop of 319 feet, 13 runs, a longest run of 2,865 feet, three or four tows, three chair lifts, and one T-bar, J-bar, or Poma lift (Table 21-4). Information about lift ticket sales at the principal ski resorts in the state are available in the TTRRC's winter season travel monitoring reports. Useful baseline information on Michigan's downhill ski market may be found in Stynes, Mahoney, and Spotts (1980), Stynes and Mahoney (1980), and Spotts (1980).

Cross-Country Skiing

Participation in cross-country skiing has grown rapidly in the United States during the last 20 years. A nationwide outdoor recreation survey conducted in 1982-83 found that in 1981-82 about 6 million people age 12 or older cross-country skied (U.S. Department of the Interior, 1986). In similar surveys conducted in 1960 and 1965, cross-country skiing was not even studied since participation rates were believed to be insignificant. In the 1982-83 study, 42% of the participants had adopted the sport within the previous two years. It was estimated that two million additional Americans age 12 or older would be participants by 1985.

Cross-country skiing is important in Michigan because the state's relatively heavy snowfall and extensive public lands provide abundant opportunities to participate in the sport. According to the Michigan Department of Natural Resources (n.d.), 5.7 million activity-days

Table 21-1. Number of registered snowmobiles by state, 1990.

Rank	State	Number of Registered Snowmobiles	Percent	Cumulative Percent	Estimated No. Unregistered Snowmobiles
1	■ Michigan	205,772	19.6	19.6	N.A.
2	Minnesota	194,339	18.5	38.0	N.A.
3	Wisconsin	151,000	14.4	52.4	N.A.
4	Maine	63,190	6.0	58.4	N.A.
5	Illinois	60,510	5.8	64.2	N.A.
6	New York	46,324	4.4	68.6	N.A.
7	Pennsylvania	43,000	4.1	72.6	25,000
8	Vermont	33,961	3.2	75.9	N.A.
9	New Hampshire	33,000	3.1	79.0	2,475
10	Massachusetts	23,110	2.2	81.2	N.A.
11	Indiana	22,941	2.2	83.4	N.A.
12	Iowa	22,020	2.1	85.5	N.A.
13	Ohio	17,947	1.7	87.2	N.A.
14	Washington	17,280	1.6	88.8	N.A.
15	Colorado	16,026	1.5	90.4	4,000
16	Idaho	15,356	1.5	91.8	15,000+
17	Wyoming	14,683	1.4	93.2	N.A.
18	Montana	14,500	1.4	94.6	36,462
19	Utah	12,706	1.2	95.8	N.A.
20	North Dakota	10,893	1.0	96.8	N.A.
21	Oregon	9,533	0.9	97.8	N.A.
22	California	7,989	0.8	98.5	2,330
23	New Jersey	3,641	0.4	98.9	N.A.
24	South Dakota	3,200	0.3	99.2	N.A.
25	Connecticut	3,062	0.3	99.5	N.A.
26	Alaska	2,756	0.3	99.7	N.A.
27	New Mexico	1,100	0.1	99.8	N.A.
28	Nebraska	902	0.1	99.9	N.A.
29	Rhode Island	432	0.0	99.9	N.A.
30	Maryland	333	0.0	100.0	N.A.
31	Delaware	307	0.0	100.0	N.A.
	Total	1,051,813	100.0		

NOTE: The remaining states do not register snowmobiles. Many of these figures lack strict comparability across states because the lengths of registration periods vary and registration figures are current as of different dates.

SOURCE: International Snowmobile Industry Association.

Table 21-2. Number of registered snowmobiles by Michigan county, 1990.

County	No. Registered Snowmobiles	County	No. Registered Snowmobiles
Alcona	673	Lapeer	2,480
Alger	1,242	Leelanau	1,101
Allegan	2,612	Lenawee	3,028
Alpena	1,697	Livingston	3,861
Antrim	1,362	Luce	905
Arenac	919	Mackinac	2,080
Baraga	563	Macomb	12,824
Barry	1,673	Manistee	1,022
Bay	4,586	Marquette	3,937
Benzie	928	Mason	832
Berrien	2,553	Mecosta	1,156
Branch	903	Menominee	1,601
Calhoun	1,776	Midland	1,760
Cass	1,744	Missaukee	957
Charlevoix	1,721	Monroe	3,849
Cheboygan	2,450	Montcalm	1,573
Chippewa	3,615	Montmorency	1,273
Clare	1,476	Muskegon	2,955
Clinton	2,066	Newaygo	1,488
Crawford	979	Oakland	19,241
Delta	2,458	Oceana	956
Dickinson	1,645	Ogemaw	1,367
Eaton	2,068	Ontonagon	1,113
Emmet	1,928	Osceola	1,007
Genesee	9,481	Oscoda	780
Gladwin	1,262	Otsego	1,598
Gogebic	1,301	Ottawa	4,621
Grand Traverse	3,133	Presque Isle	1,333
Gratiot	1,285	Roscommon	3,158
Hillsdale	938	Saginaw	6,391
Houghton	2,145	Saint Clair	3,502
Huron	2,201	Saint Joseph	1,037
Ingham	3,447	Sanilac	1,202
Ionia	1,203	Schoolcraft	1,027
Iosco	1,436	Shiawassee	2,265
Iron	976	Tuscola	2,724
Isabella	1,270	Van Buren	1,445
Jackson	3,083	Washtenaw	3,626
Kalamazoo	2,774	Wayne	15,130
Kalkaska	1,143	Wexford	1,425
Kent	8,913	Foreign	3,561
Keweenaw	125	Unknown County	227
Lake	622	TOTAL	217,793

SOURCE: Michigan Department of State, Systems Programming Division.

Table 21-3. Number of downhill ski areas by state, 1990.

Rank	State	No. Downhill Ski Areas	Percent	Cumulative Percent
1	New York	51	10.6	10.6
2	■ Michigan	44	9.2	19.8
3	Wisconsin	35	7.3	27.0
3	California	35	7.3	34.3
4	Colorado	28	5.8	40.1
5	Pennsylvania	26	5.4	45.5
5	New Hampshire	26	5.4	50.9
6	Vermont	24	5.0	55.9
7	Minnesota	18	3.7	59.7
8	Massachusetts	16	3.3	63.0
9	Utah	14	2.9	65.9
10	Montana	13	2.7	68.6
11	Idaho	12	2.5	71.1
11	Washington	12	2.5	73.6
12	New Mexico	11	2.3	75.9
12	Wyoming	11	2.3	78.2
12	Maine	11	2.3	80.4
13	Oregon	10	2.1	82.5
13	North Carolina	10	2.1	84.6
14	Iowa	8	1.7	86.3
15	West Virginia	7	1.4	87.7
16	Illinois	6	1.2	89.0
16	Ohio	6	1.2	90.2
16	Connecticut	6	1.2	91.5
16	Alaska	6	1.2	92.7
16	New Jersey	6	1.2	94.0
17	Indiana	4	0.8	94.8
17	North Dakota	4	0.8	95.6
17	Virginia	4	0.8	96.5
17	Arizona	4	0.8	97.3
18	Nevada	3	0.6	97.9
18	South Dakota	3	0.6	98.5
19	Georgia	1	0.2	98.7
19	Alabama	1	0.2	99.0
19	Maryland	1	0.2	99.2
19	Nebraska	1	0.2	99.4
19	Rhode Island	1	0.2	99.6
19	Kentucky	1	0.2	99.8
19	Tennessee	1	0.2	100.0
	Total	481	100.0	

NOTE: The remaining states (AR, DE, FL, HI, KS, LA, MS, MO, OK, SC, and TX) have no downhill ski areas.

SOURCE: Enzel, Robert G. 1990. The White Book of Ski Areas. Washington, D.C.: Inter-Ski Services, Inc.

Table 21-4. Selected characteristics of Michigan's downhill ski areas.

Name of Area	Vertical Drop (ft)	No. Runs	Longest Run (ft)	Slope Difficulty (% of total)			Lift Capacity Per Hour	Number of Lifts[1]		
				Beginner	Intermediate	Advanced		Tows	Bars	Chairs
1. Al Quaal Recreation Area	100	3	600	50	50	0	350	3	0	0
2. Alpine Valley	300	25	1,800	30	40	30	16,800	13	10	10 dbls
3. Big Powderhorn Mountain	622	23	5,280	35	35	30	9,600	0	0	8 dbls
4. Bintz Apple Mtn. Resort	200	10	1,000	N.A.	N.A.	N.A.	6,000	10	0	0
5. Bittersweet Ski Area	300	12	2,300	Yes	Yes	Yes	N.A.	4	0	4 trpls
6. Blackjack	465	16	5,280	20	40	40	4,800	2	0	4 dbls
7. Boyne Highlands	515	17	5,200	30	35	35	15,000	1	1	4 trpls, 3 quads
8. Boyne Mountain	450	18	5,280	25	40	35	17,000	1	0	11 (4 quads)
9. Caberfae Ski Resort	470	22	2,640	30	40	30	10,000	3	5-T	3 (1 trpl)
10. Cannonsburg Ski Area	250	15	1,800	N.A.	N.A.	N.A.	12,000	10	2-T	3 (1 dbl, 1 trpl, 1 quad)
11. Crystal Mountain	375	22	2,640	25	45	30	7,200	1	0	4 (2 dbls, 1 trpl, 1 quad)
12. Gladstone Sports Park	110	4	1,000	Yes	Yes	No	N.A.	4	1-T	0
13. Hanson Hills	200	8	1,320	Yes	Yes	No	N.A.	4	1-T	0
14. Hickory Hills	238	6	2,400	Yes	Yes	Yes	N.A.	6	0	0
15. The Homestead	375	11	2,640	N.A.	N.A.	N.A.	3,300	1	0	3 (1 dbl, 2 trpls)
16. Indianhead Mtn. & Bear Creek	638	18	5,280	20	60	20	8,550	1	3	5 (3 dbls, 1 trpl, 1 quad)
17. Marquette Mountain	600	16	6,600	25	50	25	3,500	1	1-T	2 dbls
18. Michawaye-AuSable Ski Area	215	9	1,200	N.A.	N.A.	N.A.	N.A.	2	2-P	1 dbl
19. Mio Mountain	250	13	1,500	N.A.	N.A.	N.A.	N.A.	5	0	0
20. Missaukee Mountain	470	5	1,300	N.A.	N.A.	N.A.	600	3	0	0
21. Mont Ripley	420	6	2,200	N.A.	N.A.	N.A.	2,400	0	1-T	1 dbl
22. Mott Mountain	200	5	1,800	N.A.	N.A.	N.A.	3,600	4	0	1 dbl
23. Mt. Brighton Ski Area	250	25	1,500	30	40	30	17,200	10	0	7 (3 dbls, 4 trpls)
24. Mt. Holly Ski Area	327	16	1,800	N.A.	N.A.	N.A.	8,500	4	0	7
25. Mt. McSauba Ski Hill	160	3	0	N.A.	N.A.	N.A.	600	3	0	0
26. Mt. Zion Ski Area	302	5	3,750	Yes	Yes	Yes	1,200	2	0	1 dbl
27. Mulligan's Hollow Ski Bowl	130	6	750	N.A.	N.A.	N.A.	750	3	0	0
28. Nub's Nob	427	18	3,960	30	40	30	10,000	1	0	5 (2 dbls, 2 trpls, 1 quad)
29. Pando Ski Center	125	6	1,000	34	33	33	N.A.	6	0	0
30. Petoskey Winter Sports Park	100	1	460	N.A.	N.A.	N.A.	N.A.	1	0	0
31. Pine Knob Ski Resort	300	8	3,960	Yes	Yes	Yes	N.A.	7	0	5 (3 trpls)
32. Pine Mountain	400	20	5,280	30	40	30	4,300	1	0	3 dbls
33. Porcupine Mtns. State Park	600	13	5,280	N.A.	N.A.	N.A.	3,500	2	3	1 dbl
34. Riverview Highlands Ski Area	195	10	1,600	Yes	Yes	Yes	7,200	4	2	2 quads
35. Shanty Creek-Schuss Mtn. Resort	400	30	5,280	25	50	25	7,800	3	0	6 (5 dbls, 1 trpl)
36. Ski Brule Mtn./Ski Homestead	500	12	5,280	30	40	30	4,700	2	2-T	3 dbls
37. Ski World	220	15	1,800	20	45	35	8,400	6	0	3
38. Skyline Ski Area	210	11	2,000	N.A.	N.A.	N.A.	9,500	8	0	1
39. Snowsnake Mountain	215	14	2,640	N.A.	N.A.	N.A.	3,600	5	0	1 trpl
40. Sugar Loaf Resort	440	20	5,300	20	45	35	6,000	0	1-J	5 dbls
41. Swiss Valley Ski Area	225	11	2,200	N.A.	N.A.	N.A.	7,500	4	0	3 (1 trpl, 2 quads)
42. Sylvan Resort	225	14	2,200	20	60	20	4,800	1	0	3 (1 dbl, 2 trpls)
43. Timber Ridge Ski Area	250	15	2,000	40	40	20	6,000	3	1	3 (1 dbl, 1 trpl, 1 quad)
44. Tyrolean Ski Resort	270	14	4,100	N.A.	N.A.	N.A.	900	1	1	1 dbl
Average	318.9	13.0	2,865					3.5	0.8	2.8

[1] T=T-bar; P=Poma; J=J-bar; dbl=double chair lift; trpl=triple chair lift.

SOURCES: Enzel, Robert G. 1989. The White Book of Ski Areas: U.S. and Canada. Washington, D.C.: Inter-Ski Services, Inc.

Michigan Travel Bureau. 1989. Michigan Winter Travel Guide and Calendar of Events. Lansing, MI: Michigan Travel Bureau.

of participation in cross-country skiing occurred in Michigan in 1980-81.[1]

Cross-country ski trails in Michigan are provided by the private sector and by agencies at all levels of government. The largest single provider of cross-county ski trails in Michigan, however, is the MDNR Forest Management Division. The latter provides 228 miles of cross-country ski pathways in Michigan's state forest system, located in the Upper Peninsula and the Northern Lower Peninsula. This constitutes over 22% of all cross-country ski trail mileage in Michigan (Michigan Department of Natural Resources, n.d.).

Recently the MDNR Forest Management Division contracted with the MSU Department of Park and Recreation Resources to conduct a survey of cross-country skiers who skied on state forest pathways in 1988. The survey yielded information on skiers' personal characteristics, information sources, travel behavior, expenditures, satisfaction levels, and management preferences. A summary of selected results of the survey, broken down by region, follows. Additional results may be found in Nelson (1988a).

Survey Methods and Limitations

Between January 10 and April 2, 1988, postcard questionnaires were made available to cross-country skiers at sampling stations on 26 state forest pathways (Figure 21-1). A sampling station consisted of a post with a sign asking skiers to complete a postcard questionnaire available in a box beneath the sign. Sampling stations were located a short distance down the pathways from parking lots. The pathways were selected to provide systemwide geographic representation.

The postcard questionnaire included 10 questions about skiers' trips and spaces for respondents to write their name and telephone number if they wished to be contacted later to provide further information. Those who returned a completed questionnaire and provided their name and telephone number were subsequently contacted by telephone. The potential bias associated with this procedure is that respondents were self-selected, and may have been more likely to be active participants in the sport or to have strong opinions about it than nonrespondents.[2] Furthermore, since state forest pathways are located only in the northern two-thirds of the state, and since the characteristics of individuals who cross-country ski on such pathways may differ from those of individuals who cross-country ski at other locations (e.g., golf courses, downhill ski areas) the results presented below may not be representative of all individuals who participate in the sport in Michigan. However, at present these results constitute the best available descriptive information on those who cross-country ski in Michigan.

Five hundred and ninety-five persons who used a state forest pathway for cross-country skiing sent in a post card questionnaire. Of these, 461 (77%) provided their name and telephone number and completed a telephone interview when contacted, 117 (20%) did not provide their name and telephone number, and 17 (3%) provided their name and telephone number but could not be contacted. The latter 17 persons and an individual who did not use the pathway for cross-country skiing were excluded from the analysis. Thus the analysis was conducted on 578 (595 minus 17) individuals (Table 21-5).

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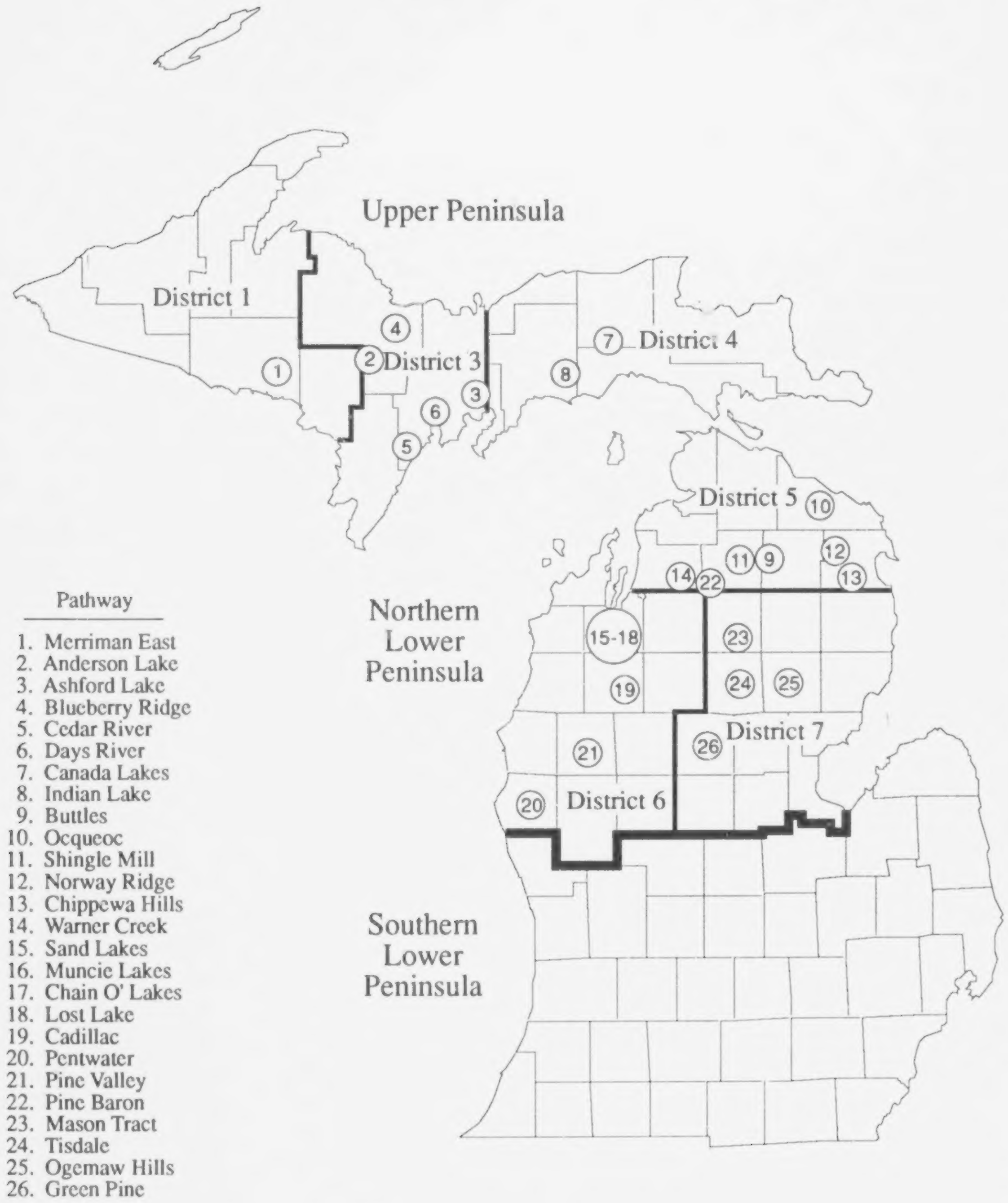
[1] An activity-day was defined as participation in the activity by one individual for any portion of one day.

[2] It was also possible for a given skier to respond more than once. However, only two duplicate questionnaires were noted and these were removed prior to the analysis.


Upper Peninsula
District 1
District 3
District 4
District 5
Northern Lower Peninsula
District 6
District 7
Southern Lower Peninsula
①
②
③
④
⑤
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Pathway

1. Merriman East
2. Anderson Lake
3. Ashford Lake
4. Blueberry Ridge
5. Cedar River
6. Days River
7. Canada Lakes
8. Indian Lake
9. Buttles
10. Ocqueoc
11. Shingle Mill
12. Norway Ridge
13. Chippewa Hills
14. Warner Creek
15. Sand Lakes
16. Muncie Lakes
17. Chain O' Lakes
18. Lost Lake
19. Cadillac
20. Pentwater
21. Pine Valley
22. Pine Baron
23. Mason Tract
24. Tisdale
25. Ogemaw Hills
26. Green Pine

Note: These districts are no longer in use. See Figure 18-1
for current MDNR districts.

Figure 21-1. State forest pathways sampled in cross-country skiing study.

Table 21-5. Distribution of respondents to state forest cross-country skiing study by pathway, district, and region.

Pathway	District	Number of Respondents	Percentage of Total
UP Pathways			
Merriman East	1	6	1
Anderson Lake	1	5	1
Ashford Lake	1	2	0
Blueberry Ridge	3	22	4
Cedar River	3	23	4
Days River	3	24	4
Canada Lakes	4	29	5
Indian Lake	4	8	1
Unknown UP pathway	--	1	0
Total UP		120	20
NLP Pathways			
Buttles	5	28	5
Ocqueoc	5	7	1
Shingle Mill	5	52	9
Norway Ridge	5	3	0
Chippewa Hills	5	6	1
Warner Creek	5	5	1
Sand Lakes	6	43	7
Muncie Lakes	6	38	7
Chain O' Lakes	6	16	3
Lost Lake	6	23	4
Cadillac	6	97	17
Pentwater	6	22	4
Pine Valley	6	17	3
Pine Baron	6	3	0
Manson Tract	7	28	5
Tisdale	7	18	3
Ogemaw Hills	7	38	7
Green Pine	7	11	2
Unknown NLP pathway	--	2	0
Total NLP		458	79
Grand Total	--	578	100

Results

Respondents on the average were 43 years old, had an average of 15 years of education, and had a median annual income of between $40,000 and $50,000 (Table 21-6). Although those sampled in the Upper Peninsula had income levels that were similar to those of the Michigan population, the income and education levels of the sample as a whole exceeded those of the Michigan population. The U.S. Department of the Interior (1986) similarly found that well-educated, higher-income persons were more likely to participate in cross-country skiing than other types of persons.

The average party size was 2.5 persons in the Upper Peninsula, 2.9 persons in the Northern Lower Peninsula, and 2.8 persons systemwide. The majority of those sampled in either region were in parties of two

About a third of the respondents belonged to one or more organizations with an interest in pathway management (Table 21-7). Michigan United Conservation Clubs, an umbrella organization of 500 local clubs oriented primarily to hunters and anglers, was the most frequently cited organization to which respondents belonged.

Origins and Destinations

The largest proportion of skiers (41%) originated in the populous Southern Lower Peninsula (Table 21-8). However, Northern Lower Peninsula and Upper Peninsula residents were represented in the sample at a higher level than their proportion of the state's population. The majority of skiers in either region were residents of that region.

Of the various counties in Michigan, Upper Peninsula skiers were most likely to have come from the counties of Marquette (19%), Delta (14%), Menominee (11%), Schoolcraft (8%), Luce (8%), and Wayne (3%); Northern Lower Peninsula skiers were most likely to have come from the counties of Grand Traverse (12%), Oakland (10%), Wexford (8%), Kent (6%), Saginaw (5%), and Ingham (5%); and skiers in the sample as a whole were most likely to have come from the counties of Grand Traverse (10%), Oakland (8%), Wexford (6%), Kent (5%), Ingham (4%), and Marquette (4%).

Nonresidents were much more likely to have skied on pathways in the Upper Peninsula than on pathways in the Northern Lower Peninsula. Nonresidents who skied in the Upper Peninsula were most likely to have come from Wisconsin; nonresidents who skied in the Northern Lower Peninsula were most likely to have come from Ohio. The sample of Upper Peninsula skiers contained about as many nonresidents of Michigan as residents of Michigan's Lower Peninsula.

From their lodging the night before skiing, respondents traveled an average of 27 miles to the pathway. Only five percent traveled 100 or more miles to the pathway.

Over three-quarters (79%) of the respondents skied on pathways in the Northern Lower Peninsula (Table 21-5). Moreover, over 25% of all respondents skied on either the Cadillac or Shingle Mill pathways in this region. The largest number of respondents skied in District 6 and the smallest number skied in District 1 (Figure 21-1). Assuming response rates are constant across pathways, the distribution of respondents per pathway provides an estimate of the distribution of state forest cross-country skiers across the pathways sampled. The number of respondents per pathway averaged about 24 in Districts 6 and 7, between 15 and 18 in Districts 3, 4, and 5, and less than 6 in District 1.

Table 21-6. Age, education, and income levels of state forest cross-country skiers.

	All Respondents	UP Respondents	NLP Respondents
Average age	42.6	42.6	42.6
Average years of education	15.4	14.8	15.5
Median income range	$40,000-$49,999	$20,000-$29,999	$40,000-$49,999

Table 21-7. State forest cross-country skiers' membership in selected outdoor recreation and environmental organizations.

Organization	All Respondents	UP Respondents	NLP Respondents
	percentage members		
Michigan United Conservation Clubs	11	7	12
Sierra Club	6	7	6
Wilderness Society	4	6	3
Four-H	4	5	4
Audubon Society	2	6	1
The Nature Conservancy	2	2	2
National Wildlife Federation	2	1	2
Boy Scouts of America	1	1	1
National Campers and Hikers Association	0	0	0
Other regional pathway related groups	6	6	7
Member of one or more of the above	30	33	30

Table 21-8. Origins of cross-country skiers who used Michigan state forest pathways.

Origin	All Respondents	UP Respondents	NLP Respondents
	percent		
Michigan			
Upper Peninsula	14	66	1
Northern Lower Peninsula	39	2	57
Southern Lower Peninsula	41	15	39
Total	94	82	96
Out-of-state			
Illinois	1	2	1
Indiana	0	0	1
Minnesota	0	1	0
Ohio	2	1	2
Wisconsin	3	13	0
Other	0	2	0
Total	6	18	4

NOTE: Details may not add to totals due to rounding error.

Information Sources

When asked how they first learned about the pathway, 50% of the respondents mentioned interaction with friends or relatives, 10% mentioned a map, brochure, or other MDNR publication, 8% mentioned a road sign, 8% mentioned employees at local businesses, 5% mentioned private sector publications specifically about pathways, and less than 5% mentioned newspapers, Michigan Travel Bureau publications, or information from a local chamber of commerce (Table 21-9).

Trip Characteristics

The majority of the sample had previously skied the pathway where they were sampled. In the Upper Peninsula, 70% had previously skied the pathway, and in the Northern Lower Peninsula 60% had previously skied it.

In the Upper Peninsula, skiers on the average skied 1.9 hours on the pathway the day they were sampled, and less than 1% skied more than 4 hours. In the Northern Lower Peninsula, mean skiing time was 2.4 hours, and less than 4% skied more than 4 hours.

Respondents most frequently lodged at their principal residence during the nights prior to and after their skiing (Table 21-10). However, nearly 40% spent either one or both nights away from home. These respondents most frequently stayed at commercial lodging establishments. Relatives' homes were also commonly used in both regions. Second homes were more frequently used in the Northern Lower Peninsula than in the Upper Peninsula, reflecting the greater number of such dwellings in the Northern Lower Peninsula (Figure 11-1; page 182).

Participation in Recreation Activities

When asked whether they participated in any of eight selected forest recreation activities during the previous year (1987), 99% mentioned cross-country skiing (Table 21-11). Hiking, fishing, and hunting were also popular, and respondents were much more likely to have participated in these activities than the general population of the U.S.

Expenditures

Respondents were asked how much their parties had spent within 25 miles of the pathway during the 24-hour period during which they selected a postcard and skied. Average spending in both regions was highest on lodging (Table 21-12). While only 22% of the parties systemwide made expenditures on lodging the day they skied, the expenditures of these parties accounted for 55% of the total expenditures of the sample as a whole. Almost 80% of these individuals' average per person per day expenditure of $36.57 was allocated to lodging and restaurant and bar meals and drinks, and their spending in restaurants and bars was over double that of other respondents.

On the average, Upper Peninsula skiers spent a total of $11.38 per person per day, Northern Lower Peninsula skiers spent $15.62 per person per day, and skiers systemwide spent $14.90 per person per day. These spending levels appear to have been higher than those of state forest campers (Nelson, 1988b), state park visitors (Fridgen, et. al., 1986), or commercial campground campers (Mahoney and Yu, 1988), although different procedures were used to estimate expenditures in some of these studies.

Table 21-9. How state forest cross-country skiers first learned of pathway skied.[1]

	All Respondents	UP Respondents	NLP Respondents
	percentage mentioning		
Friend or relative	50	51	49
MDNR map, brochure, or other publication	10	8	10
Road sign	8	10	7
Employee of area business	8	4	9
Atlas of Cross Country Skiing and Hiking Trails of Michigan	4	1	4
MDNR employee	2	5	2
Michigan Travel Bureau Publication	2	2	2
Other			
Live/lived nearby	5	7	5
Newspaper	4	4	4
Local Chamber of Commerce	2	4	1
Book other than Atlas mentioned above	2	2	1
Stumbled upon it	1	1	1
All other	4	1	4

[1] Close ended list included the first 8 items. Those listed under "other" are the specific other ways mentioned.

Table 21-10. Where state forest cross-country skiers lodged the night prior to and the night of skiing.

Lodging	All Respondents		UP Respondents		NLP Respondents	
	Night prior	Night of	Night prior	Night of	Night prior	Night of
	percentage lodging					
Own home	57	60	66	66	54	58
Motel/hotel/cabin	20	18	17	18	21	18
Relatives' home	8	7	8	8	8	7
Own second home	8	7	2	2	9	8
Friends' home	4	3	2	2	4	3
Others	3	4	3	3	3	5

Table 21-11. Forest recreation activities state forest cross-country skiers participated in during the preceding year and those they considered most important.

Activity	All Respondents		UP Respondents		NLP Respondents	
	Partic-ipated	Most Important	Partic-ipated	Most Important	Partic-ipated	Most Important
	percent					
Cross-country skiing	99	70	99	62	99	72
Hiking	65	9	63	9	65	9
Fishing	59	9	74	11	55	9
Hunting	32	7	40	14	30	6
Backpacking	16	2	20	1	16	2
Mountain biking	13	0	14	0	13	1
Off-road vehicle riding	13	1	15	2	13	1
Horse trail riding	9	1	8	1	10	1
Total	--	100	--	100	--	100

NOTE: Details may not add to totals due to rounding error.

Table 21-12. State forest cross-country ski parties' expenditures from 12:01 a.m. to 12:00 p.m. of the day sampled.[1]

	All Respondents		UP Respondents		NLP Respondents	
	% that made expenditures	Mean spending	% that made expenditures	Mean spending	% that made expenditures	Mean spending
Lodging	22	$13.26	19	$ 8.87	23	$14.44
Restaurant/bar	51	12.77	42	7.40	53	14.21
Grocery	42	6.10	50	5.30	40	6.33
Vehicle-related	45	5.10	56	4.62	43	5.23
Ski equipment	10	2.42	12	1.07	9	2.78
Other	12	2.08	13	1.20	12	2.32
All Items	76	$41.73	80	$28.46	75	$45.31

[1] Local area defined as within 25 miles of the pathway.

Satisfaction Levels

Respondents were asked to rate their satisfaction with the pathway for cross-country skiing on a scale from 1 ("highly dissatisfied") to 9 ("highly satisfied"). Mean ratings were 7.6 for Upper Peninsula skiers and 7.8 for Northern Lower Peninsula skiers. The most frequently mentioned "most important reason" for respondents' ratings was proper grooming in the case of Upper Peninsula skiers and scenic beauty in the case of Northern Lower Peninsula skiers and skiers systemwide (Table 21-13).

Management Preferences

Respondents were asked to rate, on a scale from 1 ("unimportant") to 9 ("highly important"), the importance of various factors when selecting a cross-country skiing site. Adequate pathway marking and grooming and adequate directional signage to pathway access points received the highest mean ratings (Table 21-14). In general, features of the pathway itself were considered more important in selecting a site than proximity to lodging facilities, restaurants, or major roads.

When asked which characteristics of state forest pathways they most wished to remain unchanged, adequate grooming was most frequently mentioned by Upper Peninsula skiers, while Northern Lower Peninsula skiers most frequently mentioned the natural setting (Table 21-15). Keeping pathways non-motorized was also mentioned frequently by skiers in both regions.

Respondents were also asked to state the single most important change in pathway management they desired. Additional skiing opportunities, better enforcement against illegal motorized use, and "no change needed" were the most frequent responses systemwide (Table 21-16). Upper Peninsula skiers most frequently mentioned "no change needed," followed by additional skiing opportunities and improved grooming and maintenance. Northern Lower Peninsula skiers most frequently mentioned additional skiing opportunities, better enforcement against illegal motorized use, and improved pathway marking.

Summary

Cross-country skiers who use state forest pathways have above-average education and income levels and spend considerable funds in nearby communities, especially if they use commercial lodging facilities. Most are returning skiers who are generally satisfied with the cross-country skiing experiences provided by state forest pathways. In general, they seek well-marked and well-groomed trails in a scenic, natural setting. However, important differences exist in the characteristics and preferences of Upper Peninsula versus Northern Lower Peninsula skiers, which should be considered in the development of marketing strategies.

Table 21-13. Most important factor in determining state forest cross-country skiers' rating of pathway skied.[1]

Factor	All Respondents	UP Respondents	NLP Respondents
	percentage mentioning		
Positive factors			
Scenic beauty	24	20	25
Well-groomed	13	24	10
Variety of terrain	8	4	9
Diverse trail	7	4	8
Well-maintained	7	8	6
Solitude	7	2	8
Well-marked	3	1	4
Hills	3	2	3
Close to home	2	2	2
Challenging	2	1	2
Good for beginners	2	0	2
Good distance options	1	1	1
Wide trail	0	0	1
All other positive factors	4	11	3
Total positive factors	83	81	84
Negative factors			
Poorly groomed	3	8	2
Lack hills	2	2	2
Motorized vehicle disturbance	2	1	2
Debris on trail	1	1	1
Unchallenging	1	1	1
Inadequately marked	1	0	2
Poor maintenance	1	0	1
Lacks diversity	1	2	0
Poor for beginners	1	0	1
Crowded	0	0	1
All other negative factors	3	2	3
Total negative factors	17	19	16

[1] Open ended question.

NOTE: Details may not add to totals due to rounding error.

Table 21-14. Importance of selected factors to state forest cross-country skiers when choosing a cross-country skiing site.[1]

Factor	All Respondents	UP Respondents	NLP Respondents
	mean rating		
Directional signs and mileage markers on pathway	7.6	7.6	7.5
Groomed pathway	7.2	8.1	7.0
Directional signs to the pathway from a main road	7.0	7.2	6.9
Close to home	5.8	6.0	5.8
Close to major roads	4.6	4.4	4.7
Close to lodging	3.4	2.9	3.6
Close to restaurants	2.9	2.6	3.0

[1] Rating scale of 1-9 where 1 is unimportant and 9 is highly important.

Table 21-15. Most important feature of state forest pathways state forest cross-country skiers would like to remain unchanged.[1]

Feature	All Respondents	UP Respondents	NLP Respondents
	percentage mentioning		
Natural, primitive setting	21	9	24
Non-motorized	16	14	16
Well groomed	11	22	9
Everything	8	14	7
Well marked	8	6	8
Well maintained	7	5	7
No fee to use	6	2	6
Many pathways open to public	5	4	5
Non-commercial	3	4	3
Close to home	3	2	3
Under MDNR management	2	2	2
All others (none mentioned by more than 2% of total)	10	15	9

[1] Open ended question.

Table 21-16. Most important change in state forest pathways desired by state forest cross-country skiers.[1]

	All Respondents	UP Respondents	NLP Respondents
	-----------percentage mentioning-----------		
Construct more pathways	13	11	13
Better enforcement against illegal motorized use	11	5	13
No change needed	11	19	10
Improve pathway marking	10	3	12
Improve grooming	8	10	8
Provide more information about pathways	6	5	6
Improve maintenance	5	9	4
More non-fee funding for trail programs	4	7	3
Improve parking	4	0	4
Provide rest rooms on trail	4	4	3
Provide benches/rest areas along trail	3	4	3
Initiate user fee to fund trail programs	3	5	2
Provide double track trails	2	0	2
All others (none mentioned by more than 2% of total)	16	18	16

[1] Open ended question.

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CHAPTER 22

ESTIMATES OF THE ECONOMIC IMPACT OF TRAVEL IN MICHIGAN

Daniel M. Spotts

Introduction

Economic decision-making at the state level requires a knowledge of the size of the principal industries of a state's economy. At present, the only available estimates of the size of the travel and tourism industry in Michigan are those published by the U.S. Travel Data Center (USTDC). These estimates are produced by the Data Center's Travel Economic Impact Model (TEIM). This chapter utilizes results from the TEIM to compare the impact of travel on Michigan's economy with the impact of travel on other state's economies, and to document trends and patterns in the economic impact of travel in Michigan.

The chapter deals solely with statewide estimates of the combined economic impact of all types of travel. Estimates of the economic impact in Michigan of participation in specific types of recreation are not available except in the case of boating (Table 15-4; page 264), hunting (Table 20-20; page 425), and horse racing (Dike, et. al., 1977). Current and accurate estimates of economic impact at the county or regional level are not available. However, some studies of the economic impact of certain types of travel activities on local areas have been conducted and are cited at the end of the chapter.

An Overview of the Travel Economic Impact Model

Since all of the estimates discussed below were produced by the TEIM, it is important to understand something of the nature and limitations of this model. The TEIM produces annual estimates of the impact of travel by U.S. residents on national, state, and county economies. This travel includes trips taken for such purposes as business, recreation, and visiting friends and relatives. The TEIM is a disaggregated model built upon estimates of traveler expenditures in 15 different categories, and the business receipts, employment, personal income, and tax receipts that result.

Estimation Procedures

The basic data on travel activity levels used in the model (e.g., number of miles traveled by mode of transportation, number of nights away from home spent by type of accommodation) are obtained from the USTDC's National Travel Survey and Smith Travel Research's Hotel and Motel Survey. Generally, the TEIM combines the activity levels for trips to places within the U.S. with the appropriate average costs of each unit of travel activity (e.g., cost per mile by mode of transport, cost per night by type of accommodation), to estimate the total amount spent in each state on each of 15 categories of travel-related goods and services. For example, the number of automobile miles traveled from one state to another is equal to the total number of straight-line miles traveled by the travelers from the origin state multiplied by the ratio of the total number of days spent in all states by those travelers. The operating cost per mile for the state visited is then multiplied by the number of miles traveled in the state to determine the variable automobile expenditure in that state (USTDC, 1991:60).

In 1990, the TEIM underwent a substantial revision and was benchmarked to 1987. Therefore, the outputs of the current model presented below, i.e., estimates for 1989 and revised estimates for 1987 and 1988, are *not comparable* to the published outputs of earlier versions of the model, including those estimates reprinted in the first edition of this book.

Limitations of the Model

The TEIM cannot estimate all spending associated with travel in the U.S. due to limitations in the data used in the model and a lack of data needed to refine the model. Specifically, the estimates of travel expenditures produced by the model do not include:

1. Goods and services purchased in anticipation of a trip away from home (e.g., sports equipment, travel guides, skiing lessons).

2. Major consumer durables related to outdoor recreation on trips (e.g., boats, off-road vehicles, snowmobiles), with the exception of recreation vehicles.

3. Expenditures in states that travelers pass through in a single day. The TEIM records travel expenditures only for those states where travelers spent the night, originated, or were destined.

4. Expenditures by U.S. residents in the U.S. pursuant to traveling to a foreign destination.

5. Expenditures by foreign travelers in the U.S.

6. Expenditures on day trips to places less than 100 miles from home. The TEIM records travel expenditures only for day trips to places 100 miles or more away from home (one-way) and overnight trips involving the use of paid accommodations, regardless of distance. However, spending on day trips close to home may represent a larger proportion of total travel spending than is commonly assumed. One indication of this is the fact that in 1982 51% of the expenditures of Ontario residents on intra-provincial trips of over 24 miles from home occurred on trips to places less than 100 miles from home (Ontario Ministry of Tourism and Recreation, 1983:29).

Finally, the TEIM produces state-level estimates of only the direct economic impact of traveler expenditures. These estimates do not account for indirect spending in a given state which results from travel-related businesses and their employees spending a portion of the money they receive from travelers at other businesses who, along with their employees, spend some of these receipts at yet other businesses, etc.

Despite the limitations of the TEIM, its estimates are the best available indicators of the economic impact of travel in the U.S., and can be used to compare the sizes of the travel industries in different states and to document trends and patterns in the economic impact of travel in Michigan.

A National Perspective

TEIM estimates of travel expenditures by state for 1989 are displayed in Table 22-1. These figures indicate that domestic travelers spent an estimated $6.4 billion in Michigan in 1989. This amount is lower than the amounts spent in the competing states of Illinois or Ohio, but higher than the amounts spent in Wisconsin, Minnesota, or Indiana.

Table 22-1. Estimates of each state's economic dependence on domestic travel expenditures, 1989.

DIRECT TRAVEL EXPENDITURES ($ MILLIONS)			DIRECT TRAVEL EXPENDITURES PER CAPITA[1]			TRAVEL IMPACT FACTOR[2]		
Rank	State		Rank	State		Rank	State	
1	CA	38,241.2	1	NV	$8,778.40	1	NV	45.57
2	FL	24,437.4	2	HI	4,939.12	2	HI	26.74
3	NY	18,301.0	3	DC	4,493.87	3	DC	19.13
4	TX	15,543.1	4	WY	2,084.63	4	WY	14.38
5	IL	10,865.3	5	FL	1,928.61	5	FL	10.93
6	NV	9,752.8	6	AK	1,896.77	6	MT	10.39
7	NJ	8,974.1	7	VT	1,568.08	7	NM	10.00
8	PA	8,664.4	8	MT	1,462.53	8	VT	9.58
9	VA	7,826.7	9	CO	1,460.36	9	UT	9.48
10	OH	7,253.3	10	CA	1,315.80	10	AK	8.76
11	GA	7,053.6	11	NM	1,313.61	11	ID	8.48
12	■ MI	6,426.8	12	VA	1,283.49	12	CO	8.32
13	NC	6,305.9	13	UT	1,240.36	13	SC	8.22
14	MA	6,251.5	14	AZ	1,229.02	14	ND	7.85
15	TN	5,530.1	15	ID	1,162.72	15	AZ	7.78
16	HI	5,492.3	16	NJ	1,160.04	16	TN	7.62
17	MO	5,393.3	17	SC	1,121.04	17	LA	7.35
18	CO	4,844.0	18	TN	1,119.45	18	OR	7.00
19	WA	4,451.0	19	OR	1,113.83	19	SD	6.93
20	AZ	4,370.4	20	DE	1,111.89	20	ME	6.83
21	MD	4,272.8	21	ME	1,110.72	20	GA	6.83
22	LA	4,160.5	22	GA	1,095.96	21	VA	6.78
23	SC	3,937.1	23	ND	1,064.24	22	AR	6.65
24	WI	3,646.6	24	MA	1,057.25	23	CA	6.60
25	MN	3,587.3	25	MO	1,045.42	24	MO	6.42
26	IN	3,493.1	26	NY	1,019.55	25	NC	6.31
27	AL	3,150.4	27	NH	1,012.01	26	NE	6.06
28	OR	3,141.0	28	NC	959.66	27	DE	6.02
29	CT	3,021.6	29	LA	949.45	28	MS	5.92
30	KY	2,901.4	30	SD	948.95	29	TX	5.83
31	DC	2,714.3	31	NE	936.44	30	KY	5.67
32	OK	2,362.3	32	WA	934.89	31	AL	5.61
33	IA	2,341.1	33	CT	932.88	32	IA	5.32
34	KS	2,175.7	34	IL	932.00	33	WA	5.30
35	UT	2,117.3	35	TX	914.78	34	KS	5.25
36	AR	2,065.1	36	MD	910.27	35	OK	5.18
37	NM	2,007.2	37	KS	865.78	36	WV	5.06
38	MS	1,820.7	38	AR	858.31	37	NH	4.99
39	NE	1,508.6	39	IA	824.33	38	IL	4.95
40	ME	1,357.3	40	MN	824.10	39	NJ	4.88
41	ID	1,179.0	41	KY	778.48	40	NY	4.84
42	MT	1,178.8	42	AL	765.03	41	MA	4.77
43	WV	1,160.8	43	WI	749.25	42	MN	4.67
44	NH	1,120.3	44	OK	732.72	43	WI	4.56
45	AK	999.6	45	PA	719.63	44	MD	4.33
46	WY	990.2	46	MS	694.66	45	PA	4.17
47	VT	889.1	47	■ MI	693.07	46	OH	4.06
48	DE	748.3	48	OH	665.01	47	■ MI	3.97
49	ND	702.4	49	WV	625.09	48	IN	3.96
50	SD	678.5	50	IN	624.55	49	CT	3.78
51	RI	620.5	51	RI	621.74	50	RI	3.46
	US	272,027.1		US	$1,095.83		US	6.23

[1] Equals 1989 direct domestic travel expenditures in state/1989 population of state.

[2] Equals (1989 direct domestic travel expenditures in state/1989 total personal income of state) x 100.

NOTE: Figures are not comparable to estimates of economic impact previously published by the USTDC due to revision of the USTDC's economic model. See p. 452.

SOURCES: U.S. Travel Data Center. 1991. Impact of Travel on State Economies, 1989. Washington D.C.: U.S. Travel Data Center. Reprinted with permission.

U.S. Bureau of the Census. 1989. "Five States Growing By at Least 10 Percent Since 1985, Census Bureau Says." News Release CB89-204. Washington, D.C.: U.S. Bureau of the Census.

U.S. Bureau of Economic Analysis. 1990. Survey of Current Business. 70(8):28.

Much of the travel spending in a given state is by residents of that state. This partially accounts for the more heavily populated states having larger values for total travel expenditures. Consequently, it is useful to examine state travel expenditures on a per capita basis. On this basis Michigan ranks 47th nationally, while Illinois, Minnesota, and Wisconsin rank 34th, 40th, and 43rd, respectively (Table 22-1). The higher rankings of these states may be due to a higher volume of travel expenditures by either out-of-state travelers or residents of these states, or both.

Travel expenditures in each state can also be examined in relation to each state's total personal income.[1] If the ratio of travel expenditures to total personal income in a given state exceeds the corresponding ratios for other states, then that state's economy can be considered more dependent on travel expenditures than the economies of other states, and vice versa. When these ratios, or "travel impact factors," are computed for each state and then rank ordered (Table 22-1), the results are similar to those of the previously discussed analysis. This is due to the high correlation between state population and state personal income. In general, states with relatively low population bases, and economies in which travel is a dominant or major industry, receive higher rankings than other states, which suggests that their economies are more dependent on travel expenditures than those of other states. Other states with larger populations and larger economies tend to have lower rankings because such states generally have more diversified economies that are less dependent on any one industry, including travel.[2]

Michigan's low rank of 47 indicates that its economy is not as dependent on travel expenditures as the economies of other states. In contrast to states such as Nevada and Hawaii, which have relatively small populations and economies largely dominated by their travel industries, Michigan has a large population and several major industries, including agriculture, manufacturing, and forestry, in addition to travel. This is in fact consistent with common conceptions of the nature of states' economies; most people would probably be more likely to consider Hawaii or Florida a "tourist state" than Michigan. These results, however, do not mean that Michigan does not have a relatively large travel industry, that its travel industry is not one of the most important industries in the state, that Michigan does not need to further diversify its economy, or that Michigan's economy would not suffer if its travel industry declined. Rather, they simply suggest that if gasoline rationing or some other catastrophe were to strike the nation's travel industry, Michigan's economy would be damaged rather than devastated.

The figures presented in Tables 22-2 and 22-3 tell much the same story as those in Table 22-1. Direct domestic travel expenditures in Michigan in 1989 generated an estimated 113,500 full- and part-time jobs in Michigan, and an estimated $1.5 billion in payroll income. But while Michigan ranks 14th in number of jobs generated and 17th in payroll income generated by travel expenditures, it ranks 45th in number of jobs as a percentage of total nonagricultural employment (Table 22-2). Similarly, Michigan ranks 12th in state tax revenues directly generated by domestic travel expenditures, but 42nd in state tax revenues generated as a percentage of total state tax collections (Table 22-3). According to TEIM estimates, in 1989 less than 3% of the nonagricultural jobs in Michigan, and of the state tax revenues collected in Michigan, were directly generated by domestic travel expenditures in Michigan.

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[1] This procedure was introduced by Royer, McCool, and Hunt (1974) and further discussed by Doering (1976).

[2] Doering (1976), using 1972 data, found that ratios of state travel expenditures to gross state product yielded results that were very similar to ratios of state travel expenditures to state personal income. The Spearman rank order correlation between the two ratios across all 50 states was +.96.

Table 22-2. Domestic travel-generated direct employment and payroll in state economies, 1989.

TRAVEL-GENERATED EMPLOYMENT[1] (000s)			TRAVEL-GENERATED EMPLOYMENT AS A % OF TOTAL NON-AGRICULTURAL EMPLOYMENT			TRAVEL-GENERATED PAYROLL ($ MILLIONS)		
Rank	State		Rank	State		Rank	State	
1	CA	590.4	1	NV	35.07	1	CA	9,541.7
2	FL	435.2	2	HI	17.77	2	FL	5,645.7
3	TX	316.2	3	WY	10.39	3	NY	5,370.6
4	NY	290.6	4	AK	8.27	4	TX	4,781.4
5	NV	204.2	5	FL	8.25	5	IL	3,327.1
6	IL	198.2	6	VT	6.81	6	NV	2,904.9
7	VA	157.3	7	MT	6.64	7	GA	2,615.8
8	GA	154.0	8	CO	6.55	8	NJ	2,413.1
9	PA	148.9	9	NM	6.40	9	VA	2,272.9
10	NJ	146.1	10	AZ	6.31	10	PA	1,996.4
11	NC	137.4	11	UT	5.99	11	NC	1,814.8
12	OH	134.3	12	TN	5.87	12	TN	1,746.2
13	TN	126.3	13	VA	5.49	13	MO	1,638.5
14	■ MI	113.5	13	DC	5.49	14	MA	1,525.9
15	MO	107.8	14	ND	5.46	15	OH	1,496.2
16	CO	96.4	15	SD	5.24	16	MN	1,486.5
17	MA	92.7	16	GA	5.23	17	■ MI	1,466.8
18	AZ	91.9	17	ID	5.09	18	HI	1,414.7
19	HI	89.7	18	SC	5.03	19	CO	1,411.2
20	MN	82.9	19	LA	4.80	20	WA	1,173.9
21	WA	76.8	20	OR	4.74	21	AZ	1,102.4
22	SC	75.5	21	CA	4.72	22	MD	985.3
23	WI	73.7	22	MO	4.67	23	OK	904.7
24	LA	72.8	23	TX	4.64	24	LA	811.8
25	MD	72.1	24	OK	4.60	25	IN	755.9
26	IN	71.0	25	NC	4.48	26	SC	738.4
27	KY	63.4	26	KY	4.42	27	KY	710.7
28	OR	57.2	27	ME	4.30	28	WI	681.8
29	OK	53.1	28	AR	4.20	29	DC	626.1
30	AL	50.9	29	NE	4.18	30	CT	609.8
31	IA	43.1	30	MN	3.96	31	OR	609.5
32	UT	41.4	31	NJ	3.94	32	UT	544.4
33	CT	38.6	32	IL	3.83	33	AL	506.1
34	DC	37.5	33	WA	3.75	34	IA	356.7
35	AR	37.4	34	MS	3.70	35	AK	348.6
36	KS	37.1	35	IA	3.59	36	KS	344.9
37	NM	35.9	36	DE	3.55	37	NM	335.8
38	MS	34.1	37	NY	3.52	38	AR	328.2
39	NE	29.5	38	KS	3.48	39	MS	326.0
40	ME	23.4	39	MD	3.36	40	NE	248.2
41	WY	20.1	40	WI	3.31	41	ME	229.5
42	MT	19.3	41	NH	3.23	42	NH	189.5
42	WV	19.3	42	AL	3.20	43	WV	186.1
43	AK	18.8	43	WV	3.15	44	MT	180.5
44	ID	18.7	44	MA	2.98	45	RI	169.5
45	VT	17.8	45	PA	2.91	46	WY	167.0
46	NH	17.0	45	■ MI	2.91	47	ID	164.3
47	SD	14.4	46	IN	2.88	48	DE	161.8
48	ND	14.2	47	OH	2.79	49	VT	159.6
49	DE	12.2	48	CT	2.30	50	SD	114.4
50	RI	8.7	49	RI	1.89	51	ND	108.6
	US	4,918.9		US	4.55		US	69,750.2

[1] Includes both full-time and part-time jobs.

NOTE: Figures are not comparable to estimates of economic impact previously published by the USTDC due to revision of the USTDC's economic model. See p. 452.

SOURCES: U.S. Travel Data Center. 1991. Impact of Travel on State Economies, 1989. Washington, D.C.: U.S. Travel Data Center. Reprinted with permission.

U.S. Bureau of Labor Statistics. 1990. Employment and Earnings. 37(5):128-143.

Table 22-3. State tax revenues directly generated by domestic travel in the U.S., 1989.

TRAVEL-GENERATED STATE TAX RECEIPTS ($ MILLIONS)			TRAVEL-GENERATED STATE TAX RECEIPTS AS A % OF TOTAL STATE GOVERNMENT TAX COLLECTIONS		
Rank	State		Rank	State	
1	CA	1,169.5	1	NV	14.54
2	FL	969.4	2	HI	10.18
3	NY	636.7	3	UT	8.37
4	TX	597.2	4	FL	7.78
5	IL	421.1	5	TN	7.03
6	NJ	397.5	6	ID	6.83
7	VA	354.9	7	SD	6.60
8	PA	332.7	8	CO	6.45
9	TN	285.7	9	VT	5.93
10	OH	279.4	10	MT	5.92
11	GA	275.3	11	SC	5.91
12	■ MI	267.7	12	OK	5.73
13	NC	233.4	13	VA	5.36
14	HI	225.6	14	AZ	5.24
15	SC	219.5	15	NM	4.96
16	MO	218.6	16	AR	4.76
17	AZ	212.9	17	WY	4.69
18	NV	194.8	18	NE	4.68
19	OK	189.9	19	MO	4.67
20	CO	187.3	20	NH	4.66
21	MN	184.5	21	ND	4.65
22	MD	182.8	22	LA	4.38
23	MA	178.1	23	GA	4.34
24	LA	173.8	24	TX	4.27
25	WI	170.3	25	MS	3.85
26	WA	168.1	26	NJ	3.79
27	IN	155.7	27	IA	3.77
28	KY	129.3	28	ME	3.75
29	IA	119.1	29	IL	3.58
30	UT	118.8	30	KS	3.28
31	AL	110.8	31	WV	3.25
32	AR	103.4	32	KY	3.20
33	CT	102.2	33	NC	3.17
34	NM	93.8	34	AL	3.03
35	MS	88.9	35	MD	2.95
36	KS	81.9	36	MN	2.88
37	ID	69.0	37	CA	2.84
38	NE	67.8	38	WI	2.66
39	WV	62.1	39	IN	2.64
40	ME	59.7	40	PA	2.63
41	OR	49.9	41	WA	2.58
42	MT	43.1	41	OH	2.58
43	VT	37.6	42	■ MI	2.41
44	SD	30.9	43	NY	2.40
44	ND	30.9	44	CT	2.13
45	NH	28.6	45	RI	1.98
46	WY	27.3	46	MA	1.96
47	RI	23.0	47	OR	1.93
48	DE	19.7	48	DE	1.74
49	AK	15.0	49	AK	1.06
	US	10,395.2		US	3.66

NOTE: Figures are not comparable to estimates of economic impact previously published by the USTDC due to revision of the USTDC's economic model. See p. 452.

SOURCES: U.S. Travel Data Center. 1991. Impact of Travel on State Economies, 1989. Washington, D.C.: U.S. Travel Data Center. Reprinted with permission.

U.S. Bureau of the Census. 1990. State Government Tax Collections: 1989. Series GF-89-1. Table 2. Washington, D.C.: U.S. Government Printing Office.

Trends and Patterns in the Economic Impact of Travel in Michigan

Estimates of the direct economic impact of domestic travel on various sectors of Michigan's economy from 1987 through 1989 are presented in Table 22-4. These estimates suggest that during 1987-89 travel expenditures in Michigan, and the business receipts and payroll income directly generated by these expenditures, increased at an average annual rate of 9.8%, 11.2%, and 9.9%, respectively. However, since these estimates are not adjusted for inflation, a better indication of growth in the economic impact of travel in Michigan can be obtained from the estimated the number of jobs generated by travel during this period. These estimates suggest that travel-generated employment in Michigan increased at a more modest average annual rate of 7.0%.

The information in Table 22-4 also reveals how travel expenditures are distributed across various sectors of the state's economy. In 1989 the highest percentages of the travel expenditures in Michigan were allocated to automobile transportation (26%), public transportation (25%), and food service (23%). Lower percentages were allocated to lodging (13%), general retail trade (7%), and entertainment and recreation (6%).

It should be noted that this distribution is for all types of travel over a one-year period, and that considerably different distributions may exist for specific seasons and regions. For example, the distribution of per trip expenditures made in Michigan's central Upper Peninsula by summer travel parties contacted in this region differs significantly from the distribution noted above. These travelers allocated less of their expenditures to public transportation (0%), automobile transportation (19%), and food service (21%), and more to lodging (31%) and entertainment, recreation, and general retail trade (including groceries) (29%) (Spotts and Mahoney, 1989:13).

Table 22-4. Estimates of the direct economic impact of domestic travel on various sectors of Michigan's economy, 1987-89.

	1987	1988	1989
U.S. DOMESTIC TRAVEL EXPENDITURES ($ millions)			
Public transportation	1,404.9	1,596.2	1,595.2
Automobile transportation	1,366.5	1,572.6	1,654.0
Lodging	767.2	828.1	860.6
Food service	1,109.7	1,249.7	1,452.3
Entertainment and recreation	329.9	350.2	397.6
General retail trade	355.0	406.4	467.2
Total	5,333.1	6,003.2	6,426.8
U.S. TRAVEL-GENERATED BUSINESS RECEIPTS ($ millions)[1]			
Public transportation	1,134.9	1,402.9	1,423.9
Automobile transportation	1,321.8	1,522.3	1,600.9
Lodging	738.6	797.3	828.5
Food service	1,079.8	1,216.5	1,415.0
Entertainment and recreation	317.2	336.7	382.3
General retail trade	341.3	390.7	449.2
Total	4,933.7	5,666.5	6,099.8
U.S. TRAVEL-GENERATED PAYROLL ($ millions)			
Public transportation	450.4	510.7	551.8
Automobile transportation	88.3	114.7	117.1
Lodging	192.6	205.7	231.2
Food service	243.6	271.7	314.8
Entertainment and recreation	112.3	128.6	132.7
General retail trade	49.2	58.2	26.1
Travel planning	78.7	79.4	93.1
Total	1,215.1	1,369.0	1,466.8
U.S. TRAVEL-GENERATED EMPLOYMENT (thousands of full- and part-time jobs)			
Public transportation	16.8	17.8	17.8
Automobile transportation	5.5	7.0	7.0
Lodging	24.0	24.4	26.7
Food service	33.8	36.2	40.9
Entertainment and recreation	9.7	10.3	10.6
General retail trade	4.2	4.9	4.9
Travel planning	5.0	5.0	5.5
Total	99.1	105.6	113.5
U.S. TRAVEL-GENERATED TAX REVENUES ($ millions)			
Federal tax revenues	N.A.	N.A.	525.8
State tax revenues	N.A.	N.A.	267.7
Local tax revenues	N.A.	N.A.	88.5
Total	N.A.	N.A.	882.0

[1] Travel-generated business receipts differ from travel expenditures by excluding federal, state, local, and territorial retail sales, hotel occupancy, admission, and other taxes collected by establishments directly from customers and paid directly to taxing authorities.

NOTE: Estimates based on travel 100 miles or more away from home or overnight trips with one or more nights in paid accommodations. Figures do not account for indirect economic impacts of travel expenditures, or the direct and indirect economic impacts of foreign travel expenditures in Michigan. Details may not add to totals due to rounding. Figures are not comparable to estimates of economic impact previously published by the USTDC due to revision of the USTDC's economic model. See p. 452.

SOURCE: U.S. Travel Data Center. 1991. Impact of Travel on State Economies, 1989. Washington, D.C.: U.S. Travel Data Center. Reprinted with permission.

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CHAPTER 23

EMPLOYMENT IN TOURISM-RELATED BUSINESSES IN MICHIGAN

Daniel J. Stynes

Introduction

Tourism is increasingly recognized for its contribution to state and local economies. It is an export industry, although it differs from other export industries in that the consumer is "shipped" to the production facility rather than goods being delivered to the consumer. The economic effects are the same, i.e., a flow of dollars into a region in exchange for goods and services. Tourist spending in a region generates sales, income, and employment, first directly within businesses that serve tourists and then secondarily in many other local businesses.

Tourism is frequently cited as one of the top three industries in Michigan in terms of jobs. The U.S. Travel Data Center (USTDC) estimates that during 1987 domestic travelers spent more than $5.3 billion in Michigan, generating 99,100 jobs and $1.2 billion in wages and salaries (Table 22-4; page 458). Tourism jobs estimated by the USTDC fall into seven primary categories corresponding to the items purchased by travelers: food service (34%), lodging (24%), public transportation (17%), entertainment/recreation (10%), auto transportation (6%), travel planning (5%), and general retail trade (4%).

The Michigan Employment Security Commission (MESC) estimates that in 1987 there were 300,656 jobs in nine tourism-related sectors in Michigan. This number is over three times higher than the USTDC estimate, even though it does not include jobs in three of the categories reported by the USTDC (travel planning, public transportation, and general retail trade). More importantly, many jobs reported by MESC serve local residents as well as tourists. Thus employment in tourism-related businesses can be quite different from the number of jobs attributable to tourist expenditures.

The MESC and state-level USTDC figures primarily capture the direct employment effects of tourist spending in an area and do not account for the secondary or induced effects of tourist activity or the employment effects of construction associated with tourism development. Direct effects depend largely on the number of tourists in an area and their spending patterns. Secondary and induced effects result from the respending of these travel dollars within the local economy, and therefore also depend upon the local economic structure, which determines how much of the initial tourist spending remains in the area to be respent on other local goods and services. This respending creates additional jobs, often termed the "multiplier effect." In this way, tourist spending may have wide-ranging employment effects on a local economy (Archer, 1977; Propst, 1984).

Methods for Estimating Tourism Employment

One of the most important measures of tourism's economic impact on an area is its employment effect. However, sound estimates of the number of jobs attributable to tourism activity are difficult to obtain for several reasons:

(1) no single, widely accepted definition of a tourist or a tourism business exists;
(2) tourism is not a single business category, but an activity in which many different businesses engage to varying degrees;

(3) tourism encompasses both public and private organizations and an unknown number of small businesses, some of which are exempt from many kinds of standard economic reporting, including reporting on numbers of employees; and
(4) tourism is often a seasonal activity, employing both part time and seasonal workers. This makes the definition of a "job" difficult.

Nevertheless, many different estimates of tourism's employment effects have been made for various states and regions. These are usually generated using one of two basic methods. The first method, characterized by the USTDC's Travel Economic Impact Model (USTDC, 1991), uses general household surveys to estimate tourist spending and the volume of travel activity by broad origins, destinations, and types of travel. By multiplying estimates of spending by a given type of tourist in an area per trip by the volume of trips, the total spending of tourists in an area is generated, sometimes within major spending categories. This spending can then be converted to jobs using employment to sales ratios for different industries or other related techniques. The weaknesses of this approach are the expense and errors associated with such surveys, particularly for many small regions. The advantage is that it directly isolates tourist spending, although there remain problems in how a tourist is to be defined and how to accurately measure the relevant spending for the regions of interest.

The alternative to surveys is to isolate tourism jobs from employment statistics that are regularly reported by federal and state agencies. The advantages of this approach are that it is consistent with methods for estimating employment in other industries, relies on "hard" numbers, and is generally less expensive than survey approaches. The problems with this approach are identifying which businesses should be included in the "tourism industry" and separating the proportion of employment in these businesses attributable to tourism from that serving local populations. In spite of these difficulties, careful analysis of government employment statistics can provide considerable information about the employment effects of tourism and the relative importance of tourism to different regions.

The best approaches to understanding the employment effects of tourism often combine tourism surveys with government employment statistics. For example, while the USTDC impact model relies heavily on tourism surveys, it also uses local sales and employment data to allocate tourist spending and employment effects to counties within a state.

No statistics we are aware of pretend to fully account for all tourism-generated employment. Most attempts to estimate tourism employment center on the "travel industry," usually starting from hotels and motels, restaurants, and transportation services. Jobs in campgrounds, marinas, and other small recreation businesses are sometimes included. Tourism-related jobs that are seldom counted include construction jobs associated with tourism development, jobs stemming from the construction and use of seasonal homes, jobs in the manufacture and sale of travel and sporting equipment (e.g., boats, recreational vehicles, fishing tackle), and public employees involved in recreation and travel. Which jobs to include, how to define tourism, and which approach to use to estimate employment effects will vary with the purposes of a given inquiry.

Methods for Estimating Tourism Employment in Michigan

The USTDC estimates the direct employment effects of tourist spending in Michigan by first estimating the amount of travel in the state. The USTDC includes travel in Michigan by U.S. residents on trips that involved traveling 100 miles or more away from home (one-way) or one or more overnight stays in paid accommodations. This definition includes both business and pleasure travel. The volume of travel is multiplied by estimates of spending by different kinds of travelers in different sectors of the economy. These spending or sales estimates are then converted to the number of jobs supported. The USTDC estimates that every $54,000 spent by travelers in 1987 in Michigan supported one job and every dollar of traveler spending generated 23 cents in wage and salary income (USTDC, 1991).

MESC regularly estimates employment in Michigan within various sectors of the economy using data collected from businesses subject to the Michigan Employment Security Act. This excludes public employees and some small family businesses, which represent a share of certain kinds of tourism businesses, e.g., small campgrounds, charterboat operators, and guide services. In a 1980 report, MESC estimated there were 254,384 jobs in tourism-related businesses in Michigan in 1979 (MESC, 1980). Tourism-related businesses were defined as those falling within one of the nine Standard Industrial Classification (SIC) categories listed in Table 23-1. Not all of the jobs in these "tourism-related sectors" can be attributed to tourist activity, and there are many other jobs that are supported by tourist activity that are not included, such as travel agency and airline jobs. However, an important advantage of these data is that they have been consistently gathered and reported over the 14 year period from 1974 through 1987.

MESC statistics for 1974 through 1984 were reported in the first edition of this book (Spotts, 1986). We continue this series here, extending the basic tables from the first edition through 1987 and adding some new ones. Modifications were made in the definitions of some of the SIC categories in 1988, requiring some adjustments in the series beginning in that year. At our request, MESC has also further disaggregated these data to permit the reporting of employment within individual sectors at the county level beginning in 1985. We have also prepared new tables which portray seasonal patterns in tourism-related employment at the county level.

Statewide Trends and Patterns in Tourism-Related Employment

Trends in tourism-related employment in the nine sectors during 1977-1987 followed the general employment trend in Michigan over this period, namely a decline during the 1979-1982 recession and a significant recovery in subsequent years (Figure 23-1). After 1982, steady growth occurred in each of the nine sectors except rooming and boarding houses and camps and trailer parks, both of which fluctuated widely. Boat dealers and recreational and utility trailer dealers experienced the largest growth since 1982, both growing at an average annual rate of about 14% (Table 23-2). Overall, jobs in tourism-related businesses grew steadily after 1982 at an average annual rate of about 5% and exceeded 300,000 in 1987.

Four primary sectors accounted for 98% of tourism-related jobs in 1987: eating and drinking places (76%), hotels, motels, and tourist courts (10%), gasoline service stations (8%), and miscellaneous amusement and recreation services (5%) (Table 23-2). After 1982 eating and drinking places and hotels, motels, and tourist courts increased their share of this total slightly, while gasoline service stations and miscellaneous amusement and recreation services declined relatively. Overall, however, the distribution of jobs across the nine sectors was quite stable between 1977 and 1987.

The average number of jobs in each of the nine tourism-related sectors by month is reported in Tables 23-3 through 23-11, and the sum of jobs in these nine sectors by month is shown in Table 23-12. The statistics in these tables show that tourism activity in Michigan is quite seasonal. Statewide, jobs in tourism-related businesses in 1987 fluctuated from about 278,000 jobs in January to almost 320,000 jobs in August (Table 23-12). This is a change of plus or minus 6% of the annual average.

Table 23-1. Definitions of tourism-related economic sectors.

SECTOR	SIC CODE	DESCRIPTION	COMMENTS
Services incidental to water transportation	446	Has included marinas and yacht basins, accounting for about 60% of the jobs, and marine cargo handling, accounting for about 40% of the jobs.	The category was reorganized beginning in 1988 into SIC 449. Marinas, for example, are now SIC 4493.
Gasoline service stations	554	Establishments primarily engaged in selling gasoline and lubricating oils, but may also sell automobile parts or perform minor repair work. Includes marine service stations.	No differences in 1987 versus 1972 SIC Manuals.
Boat dealers	555	Establishments primarily engaged in the retail sale of new and used motorboats and other watercraft, marine supplies, and outboard motors.	No differences in 1987 versus 1972 SIC Manuals.
Recreational and utility trailer dealers	556	Establishments primarily engaged in the retail sale of new and used motor homes, recreational trailers, and campers (pickup coaches). Does not include mobile home dealers.	Beginning in 1988, businesses primarily selling utility trailers were excluded and classified as SIC 5599.
Eating and drinking places	581	Establishments primarily engaged in the retail sale of prepared food and drinks for on-premise or immediate consumption. Includes caterers and industrial and institutional food service establishments.	No differences in 1987 versus 1972 SIC Manuals.
Hotels, motels, and tourist courts	701	Establishments primarily engaged in providing lodging to the general public.	No differences in 1987 versus 1972 SIC Manuals.
Rooming and boarding houses	702	Establishments primarily engaged in renting rooms, with or without board on a fee basis.	No differences in 1987 versus 1972 SIC Manuals.
Camps and trailer parks	703	Establishments primarily engaged in operating sporting and recreational camps, or in providing overnight or short-term sites for recreational vehicles, trailers, campers, or tents.	No differences in 1987 versus 1972 SIC Manuals.
Miscellaneous amusement and recreation services	799	Includes physical fitness facilities, public golf courses, coin-operated amusement devices, amusement parks, membership sports and recreation clubs, and a wide range of other amusement and recreation services, including canoe rentals, driving ranges, and tourist attractions.	Beginning in 1988, billiard and pool establishments (formerly SIC 7932), and health clubs and spas (formerly SIC 7299) were added to SIC 799, while commercial museums were moved to SIC 8412 and botanical and zoological gardens were moved to SIC 8422.

NOTE: Businesses are classified according to their primary activity. A resort hotel, for example, would usually be classified as SIC 701, although it may include a restaurant, gift shop, and other facilities that, if owned separately, would be classified elsewhere.

SOURCES: Executive Office of the President, Office of Management and Budget. n.d. Standard Industrial Classification Manual: 1987. Springfield, VA: National Technical Information Service.

Executive Office of the President, Office of Management and Budget. n.d. Standard Industrial Classification Manual: 1972. Springfield, VA: National Technical Information Service.

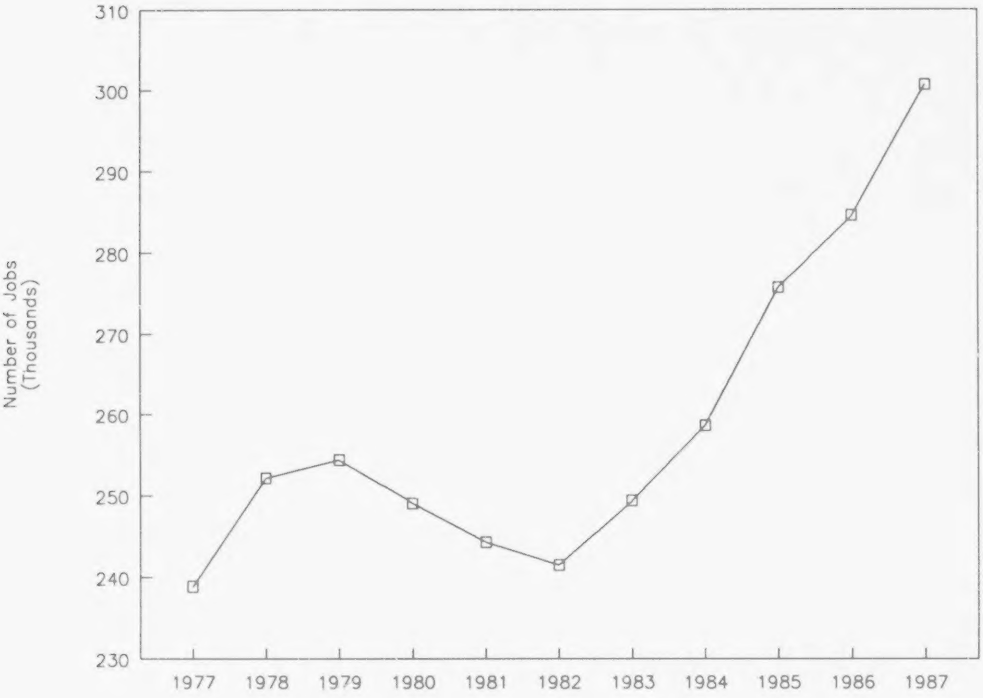


Figure 23-1. Trends in tourism-related employment in Michigan, 1977-1987.

Table 23-2. Changes in the distribution and number of jobs in tourism-related sectors in Michigan, 1977-1987.

SECTOR	DISTRIBUTION 1977	1982	1987	TREND 1977-82	1982-87	1977-87
	-------percent--------			--average annual change--		
Eating and drinking places	72.7	74.9	75.6	0.8%	4.7%	2.7%
Hotels, motels, and tourist courts	9.9	9.1	9.7	-1.5%	5.8%	2.1%
Gasoline service stations	10.2	8.5	7.8	-3.5%	2.7%	-0.4%
Misc. amusement and recreation services	5.2	6.1	5.3	3.2%	1.6%	2.4%
Boat dealers	0.6	0.4	0.7	-5.1%	14.2%	4.1%
Water transportation services	0.5	0.3	0.4	-6.2%	7.0%	0.2%
Recreational and utility trailer dealers	0.3	0.2	0.2	-13.2%	14.5%	-0.3%
Rooming and boarding houses	0.1	0.1	0.0	-7.4%	-9.2%	-8.3%
Camps and trailer parks	0.5	0.4	0.3	-1.9%	-3.1%	-2.5%
Total	100.0	100.0	100.0	0.2%	4.5%	2.3%

SOURCE: Michigan Employment Security Commission.

Table 23-3. Number of jobs in Michigan's water transportation services industry (SIC 446) by month, 1977-1987.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE
1977	795	853	868	906	1,253	1,299	1,332	1,239	1,242	1,338	1,243	1,042	1,118
1978	761	697	792	976	1,356	1,304	1,344	1,316	1,435	1,391	1,248	1,039	1,138
1979	757	783	853	983	1,224	1,408	1,294	1,310	1,266	1,187	1,232	1,064	1,113
1980	620	666	659	758	969	994	1,009	979	988	793	904	687	836
1981	516	505	525	761	873	899	974	1,029	950	882	835	724	789
1982	529	554	555	735	950	1,053	1,074	916	914	938	789	747	813
1983	555	544	581	847	1,050	1,075	1,171	1,133	1,077	1,066	1,027	829	913
1984	686	710	682	879	1,233	1,262	1,389	1,364	1,352	1,081	1,084	1,024	1,062
1985	748	742	780	1,035	1,218	1,258	1,295	1,331	1,228	1,141	1,184	1,091	1,088
1986	711	730	759	1,040	1,335	1,326	1,416	1,350	1,305	1,258	1,257	1,152	1,137
1987	839	809	842	1,129	1,247	1,247	1,414	1,423	1,394	1,216	1,159	982	1,142

SOURCE: Michigan Employment Security Commission.

Table 23-4. Number of jobs in Michigan's gasoline service station industry (SIC 554) by month, 1977-1988.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE
1977	24,762	24,790	24,656	24,350	24,456	24,709	24,530	24,329	24,303	23,951	23,892	24,293	24,418
1978	23,169	23,305	23,399	23,748	23,920	24,231	23,511	23,471	23,724	23,407	23,646	23,764	23,608
1979	23,420	23,436	23,372	21,813	21,849	21,384	20,166	20,336	20,567	20,853	20,898	20,948	21,587
1980	21,501	21,416	21,256	20,674	20,815	20,677	20,705	20,791	20,699	20,739	20,735	20,747	20,896
1981	20,613	20,281	20,152	19,436	19,678	19,653	19,621	19,590	19,626	19,569	20,567	20,565	19,946
1982	20,770	20,693	20,684	20,306	20,423	20,553	20,563	20,563	20,364	20,244	20,095	20,080	20,445
1983	19,975	19,886	19,828	19,801	20,126	20,151	20,166	20,409	20,459	19,920	20,080	20,110	20,076
1984	20,521	20,421	20,516	20,851	21,258	21,601	21,462	21,827	21,730	21,623	21,540	21,619	21,247
1985	21,483	21,380	21,589	21,407	21,828	21,968	21,969	22,302	22,153	21,924	21,991	22,152	21,846
1986	21,722	21,431	21,518	21,860	21,933	22,155	22,443	22,771	22,542	22,729	22,918	23,067	22,257
1987	22,792	22,578	22,600	22,860	23,101	23,498	23,899	24,023	23,916	23,663	23,642	23,826	23,366
1988	23,341	23,472	23,596	23,604	23,766	24,035	24,484	24,471	24,962	24,311	24,566	24,741	24,112

SOURCE: Michigan Employment Security Commission.

Table 23-5. Number of jobs in Michigan's boat dealer industry (SIC 555) by month, 1977-1988.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE
1977	1,059	1,107	1,182	1,477	1,657	1,742	1,714	1,657	1,521	1,356	1,208	1,134	1,401
1978	1,007	1,067	1,167	1,377	1,616	1,735	1,744	1,674	1,526	1,362	1,284	1,180	1,394
1979	1,106	1,170	1,289	1,573	1,802	1,868	1,744	1,674	1,507	1,373	1,252	1,127	1,457
1980	967	994	1,068	1,205	1,399	1,445	1,358	1,335	1,226	1,155	1,046	943	1,178
1981	826	851	945	1,180	1,344	1,413	1,385	1,357	1,230	1,096	997	874	1,125
1982	805	787	840	1,038	1,244	1,356	1,376	1,326	1,194	1,099	983	876	1,077
1983	751	778	887	1,188	1,336	1,408	1,414	1,381	1,300	1,200	1,102	992	1,145
1984	883	943	1,049	1,309	1,485	1,641	1,633	1,567	1,401	1,295	1,217	1,139	1,297
1985	1,095	1,171	1,359	1,806	2,073	2,177	2,178	2,173	2,013	1,831	1,730	1,643	1,771
1986	1,401	1,448	1,561	2,009	2,269	2,318	2,299	2,191	2,023	1,886	1,744	1,654	1,900
1987	1,530	1,636	1,777	2,186	2,456	2,560	2,524	2,472	2,273	2,039	1,893	1,718	2,089
1988	1,708	1,850	2,000	2,453	2,742	2,868	2,821	2,700	2,480	2,290	2,133	1,970	2,335

SOURCE: Michigan Employment Security Commission.

Table 23-6. Number of jobs in Michigan's recreational and utility trailer dealer industry (SIC 556) by month, 1977-1987.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE
1977	647	682	752	774	818	861	821	817	808	754	711	686	761
1978	640	670	695	745	817	864	941	913	866	863	847	811	806
1979	597	620	668	671	692	699	636	604	566	569	536	505	614
1980	451	453	456	382	379	375	394	404	410	398	383	358	404
1981	311	317	335	371	378	391	429	405	390	356	348	318	362
1982	302	307	330	390	386	402	433	432	410	399	359	353	375
1983	309	309	356	408	425	446	460	458	459	432	425	386	406
1984	422	441	495	557	558	594	611	618	592	572	537	519	543
1985	538	559	619	675	687	717	733	751	719	657	628	598	657
1986	534	567	610	684	705	732	741	732	703	712	702	694	676
1987	643	660	702	730	767	797	801	782	771	759	743	709	739

SOURCE: Michigan Employment Security Commission.

Table 23-7. Number of jobs in Michigan's eating and drinking places industry (SIC 581) by month, 1977-1988.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE
1977	155,846	155,312	161,031	174,217	175,996	179,898	181,386	181,438	183,268	178,916	178,463	177,537	173,609
1978	169,391	170,083	176,712	182,017	190,272	192,532	192,115	194,549	194,474	190,581	189,507	189,031	185,938
1979	174,164	175,706	180,305	189,510	196,973	200,022	195,499	195,572	196,460	195,065	192,491	191,430	190,266
1980	179,894	180,248	182,497	186,625	193,347	195,383	191,507	192,934	192,099	188,184	185,973	185,144	187,820
1981	175,772	174,684	177,775	182,907	188,672	191,792	188,796	190,892	190,172	185,008	181,846	181,615	184,161
1982	171,948	170,084	173,550	178,159	186,617	189,522	186,130	187,288	185,992	182,589	180,586	179,587	181,004
1983	175,772	175,224	178,322	186,626	192,865	197,635	194,219	196,210	197,458	193,174	191,071	189,994	189,048
1984	181,734	181,493	184,392	193,506	199,867	204,096	203,705	204,983	204,398	199,578	197,254	197,860	196,072
1985	195,037	193,643	198,064	206,249	215,051	219,574	218,481	219,672	219,974	213,156	212,864	212,197	210,330
1986	201,397	201,336	204,772	210,602	218,035	220,613	221,805	223,005	222,680	222,552	221,195	221,355	215,779
1987	212,128	212,866	217,420	222,737	228,832	233,656	235,652	236,022	233,533	232,789	230,362	230,744	227,228
1988	221,950	222,255	225,413	234,145	242,372	245,483	246,593	248,836	247,215	242,020	239,171	239,122	237,881

SOURCE: Michigan Employment Security Commission.

Table 23-8. Number of jobs in Michigan's hotel, motel, and tourist court industry (SIC 701) by month, 1977-1988.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE
1977	21,190	21,299	22,606	22,122	24,058	25,568	26,386	26,535	25,540	23,892	22,723	23,328	23,771
1978	21,998	22,263	22,672	23,284	25,016	26,354	27,734	27,638	26,491	25,348	24,014	24,724	24,795
1979	23,962	24,226	24,474	23,194	24,955	26,659	26,829	26,644	25,386	24,612	23,492	23,462	24,825
1980	21,951	22,116	22,344	21,306	23,130	24,233	25,254	25,061	24,168	22,656	21,448	21,545	22,934
1981	21,113	21,347	20,884	19,971	22,190	23,530	24,224	24,135	23,995	22,750	21,683	21,940	22,314
1982	21,379	21,089	21,001	19,974	21,989	23,166	24,505	24,570	23,539	22,140	20,601	20,778	22,061
1983	20,293	20,228	19,644	20,188	22,388	23,858	24,846	25,082	24,348	23,008	21,384	22,088	22,280
1984	22,534	22,687	22,465	21,479	23,392	24,725	25,596	25,618	24,828	22,773	21,084	21,473	23,221
1985	22,396	22,527	22,273	22,183	24,619	26,079	26,603	26,767	25,785	25,101	23,403	23,774	24,292
1986	24,451	24,439	24,191	24,889	26,387	27,656	29,695	29,875	28,658	27,776	26,363	27,206	26,799
1987	27,399	27,755	27,562	26,965	29,390	30,815	31,775	31,877	30,927	30,059	28,250	28,134	29,242
1988	27,577	27,491	27,334	27,441	29,655	31,297	33,385	33,346	32,113	31,498	29,724	30,346	30,101

SOURCE: Michigan Employment Security Commission.

Table 23-9. Number of jobs in Michigan's rooming and boarding house industry (SIC 702) by month, 1980-1988.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE
1980	166	136	129	131	163	181	198	192	178	170	133	131	159
1981	133	128	127	117	174	173	174	175	167	140	106	107	143
1982	105	103	103	105	146	141	157	156	151	151	106	106	128
1983	113	114	111	126	168	174	185	179	170	145	121	119	144
1984	82	80	78	86	101	111	173	170	154	146	97	93	114
1985	76	73	74	70	118	122	124	117	115	89	87	86	96
1986	67	70	72	76	102	105	122	124	121	88	87	92	94
1987	79	83	82	63	79	82	91	92	84	89	60	60	79
1988	66	69	67	69	80	88	142	147	136	109	72	75	93

SOURCE: Michigan Employment Security Commission.

Table 23-10. Number of jobs in Michigan's camps and trailer parks industry (SIC 703) by month, 1977-1988.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE
1977	724	741	699	746	944	1,337	2,170	2,345	1,432	945	835	851	1,147
1978	784	825	802	792	1,006	1,356	2,300	2,445	1,266	892	819	882	1,180
1979	692	661	652	686	892	1,251	2,032	2,233	1,125	712	596	613	1,012
1980	601	601	588	744	961	1,374	1,968	2,229	1,076	897	787	787	1,051
1981	646	630	545	637	878	1,161	1,999	2,072	1,104	791	699	704	989
1982	560	562	557	565	807	1,234	2,577	2,429	1,087	814	659	655	1,042
1983	530	524	530	535	771	1,398	2,164	2,077	1,235	781	655	627	986
1984	584	627	599	641	832	1,424	2,136	2,246	1,344	835	743	746	1,063
1985	757	825	828	817	1,030	1,438	1,980	2,135	1,264	844	716	551	1,099
1986	529	492	448	563	715	1,288	1,228	1,266	897	714	630	704	790
1987	533	544	545	564	804	1,166	1,936	1,819	993	674	548	539	889
1988	556	555	547	733	993	1,399	2,161	2,099	1,101	810	696	703	1,029

SOURCE: Michigan Employment Security Commission.

Table 23-11. Number of jobs in Michigan's miscellaneous amusement and recreation services industry (SIC 799) by month, 1977-1987.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE
1977	9,324	9,227	9,605	10,944	13,142	14,580	16,366	16,381	15,548	12,559	10,919	11,166	12,480
1978	10,694	10,736	11,266	11,808	14,259	16,024	16,189	16,260	15,020	12,538	10,870	11,282	13,079
1979	9,705	9,947	10,180	12,275	15,148	16,753	16,861	16,864	15,744	13,187	11,441	11,858	13,330
1980	10,746	11,001	11,506	12,255	15,376	16,696	17,578	17,445	16,018	13,457	11,593	12,162	13,819
1981	11,572	11,493	11,072	13,218	15,699	17,846	18,229	18,569	17,231	14,156	12,383	12,766	14,520
1982	11,296	11,161	11,294	12,992	16,715	18,941	18,719	18,946	17,436	14,247	12,032	11,874	14,638
1983	10,970	10,757	10,977	12,596	15,840	17,925	18,886	19,088	17,665	13,985	12,038	12,375	14,425
1984	10,300	9,863	10,250	12,248	15,259	17,604	18,322	18,450	16,952	13,843	12,214	12,404	13,976
1985	10,659	10,478	10,490	13,061	16,505	18,430	19,159	19,037	17,205	14,674	12,444	13,083	14,602
1986	10,996	10,354	10,788	13,781	16,536	18,554	19,917	19,911	17,916	15,553	13,596	14,281	15,182
1987	11,705	11,605	11,707	14,116	17,313	19,318	21,267	21,059	19,206	16,024	13,595	13,673	15,882

SOURCE: Michigan Employment Security Commission.

Table 23-12. Number of jobs in tourism-related businesses in Michigan by month, 1977-1987.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE
1977	214,530	214,186	221,571	235,736	242,516	250,192	254,910	254,939	253,847	243,909	240,171	240,208	238,893
1978	228,651	229,857	237,723	244,962	258,515	264,659	266,111	268,506	265,018	256,571	252,403	252,877	252,154
1979	234,565	236,712	241,964	250,878	263,746	270,274	265,266	265,449	262,819	257,724	252,074	251,139	254,384
1980	236,897	237,631	240,503	244,080	256,539	261,358	259,971	261,370	256,862	248,449	243,002	242,504	249,097
1981	231,502	230,236	232,360	238,598	249,886	256,858	255,831	258,224	254,865	244,748	239,464	239,613	244,349
1982	227,694	225,340	228,914	234,264	249,277	256,368	255,534	256,626	251,087	242,621	236,210	235,056	241,583
1983	229,268	228,364	231,236	242,315	254,969	264,070	263,511	266,017	264,171	253,711	247,903	247,520	249,421
1984	237,746	237,265	240,526	251,556	263,985	273,058	275,027	276,843	272,751	261,746	255,770	256,877	258,596
1985	252,789	251,398	256,076	267,303	283,129	291,763	292,522	294,285	290,456	279,417	275,047	275,175	275,780
1986	261,808	260,867	264,719	275,504	288,017	294,747	299,711	301,225	296,845	293,268	288,492	290,205	284,617
1987	277,648	278,536	283,237	291,350	303,989	313,139	319,359	319,569	313,097	307,312	300,252	300,385	300,656

NOTE: "Tourism-related businesses" means SICs 446, 554, 555, 556, 581, 701, 702, 703, and 799.

SOURCE: Michigan Employment Security Commission.

Figures 23-2 and 23-3 illustrate the distribution of tourism-related jobs and seasonal patterns by sector, with smaller sectors grouped to simplify the analysis. Rooming and boarding houses were combined with hotels, motels, and tourist courts; recreational vehicle and utility dealers with camping and trailer parks; and water transportation services with boat dealers. Figure 23-2 shows that the percentage of tourism-related jobs across the resulting six sectors did not change significantly between 1977 and 1987.

Figure 23-3 illustrates seasonal fluctuations in the number of jobs in the six sectors. The statistics plotted are seasonal factors. A seasonal factor for any given month is simply the number of jobs for the month divided by the average number of jobs for the year. A seasonal factor of 1.5 for August, for example, means that August employment was 50% higher than the annual average, while a seasonal factor of .75 for March means that jobs in that month were 25% less than the annual average. Figure 23-3 shows that the boat dealer and miscellaneous amusement and recreation sectors were much more seasonal than the other four sectors, with the boating-related sector peaking earlier in the summer.

Tourism-Related Employment in Michigan's Counties

The number of jobs in tourism-related sectors at the county level depends upon the importance of tourism in the local area and the size of the local population. Statewide trends in the growth of tourism-related jobs since 1982 are generally mirrored at the county level, although some differences exist in rates of growth across the state. Since 1982, Iosco (+21%), Chippewa (+17%), Grand Traverse (+15%) and Gratiot (+14%) Counties have experienced the largest percentage increases in tourism-related jobs (Table 23-13).

The leading counties in tourism-related jobs in 1987 were Wayne (58,281 jobs) and Oakland (51,674 jobs). However, a major share of these jobs serve the large resident populations of these counties. A better measure of the importance of tourism to a given county is the percentage of total private sector jobs in tourism-related sectors (Table 23-14; Figure 23-4). In 1987, 9.7% of all private-sector jobs statewide were in the nine tourism-related sectors. Well-known tourist counties had much higher percentages of their employment in tourism-related sectors, particularly Keweenaw (41%), Mackinac (41%), Montmorency (35%), and Roscommon (35%) Counties.

Tourism-dependent counties exhibit much larger seasonal variations in employment compared to the state as a whole. For example, employment in tourism-related sectors in Mackinac County in August 1987 was over four times what it was in April of that year (Table 23-15). Seasonal patterns at the county level may be more clearly seen by examining seasonal factors. The latter are reported in Table 23-16 for all counties for 1987. Counties are ranked according to the amount of monthly fluctuation in employment, as measured by the difference between the largest and smallest monthly seasonal factors in a given county. The rankings indicate the degree of seasonality in tourism-related employment, which is a good indicator of tourism dependency for most counties.

Keweenaw, Mackinac, Leelanau, Cheboygan, and Oceana Counties had the largest seasonal fluctuations in tourism-related jobs in 1987. July and August employment in tourism-related sectors in these counties was more than 50% above the annual average. In contrast, highly urbanized counties and rural counties with little tourism activity (ranked at the bottom of Table 23-16) had seasonal fluctuations of less than 10%.

Seasonal factors can also be used to identify counties with multi-season tourist activity. In particular, counties with both summer and winter tourist seasons can be identified from the January seasonal factors. The top thirty counties in Table 23-16 were isolated and then

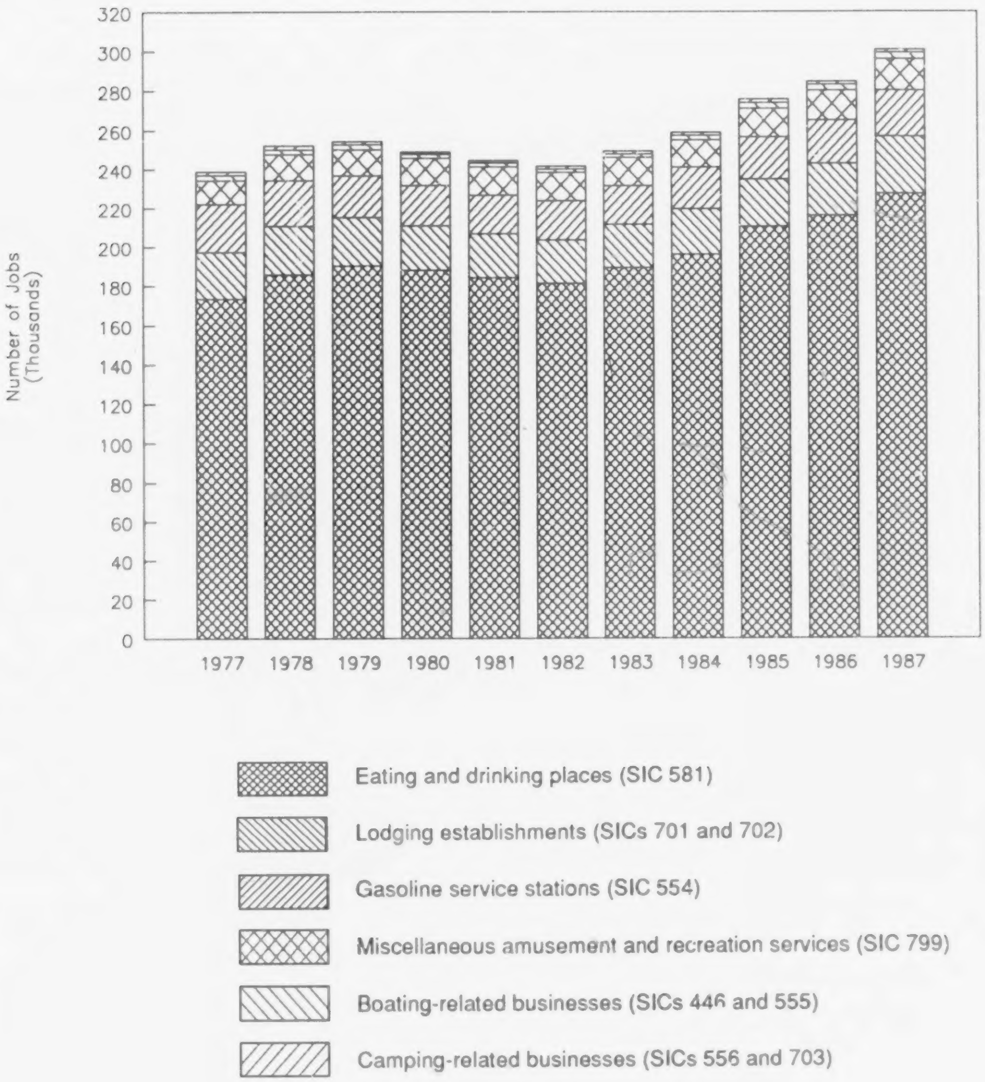


Figure 23-2. Trends in tourism-related employment in Michigan by sector, 1977-1987.

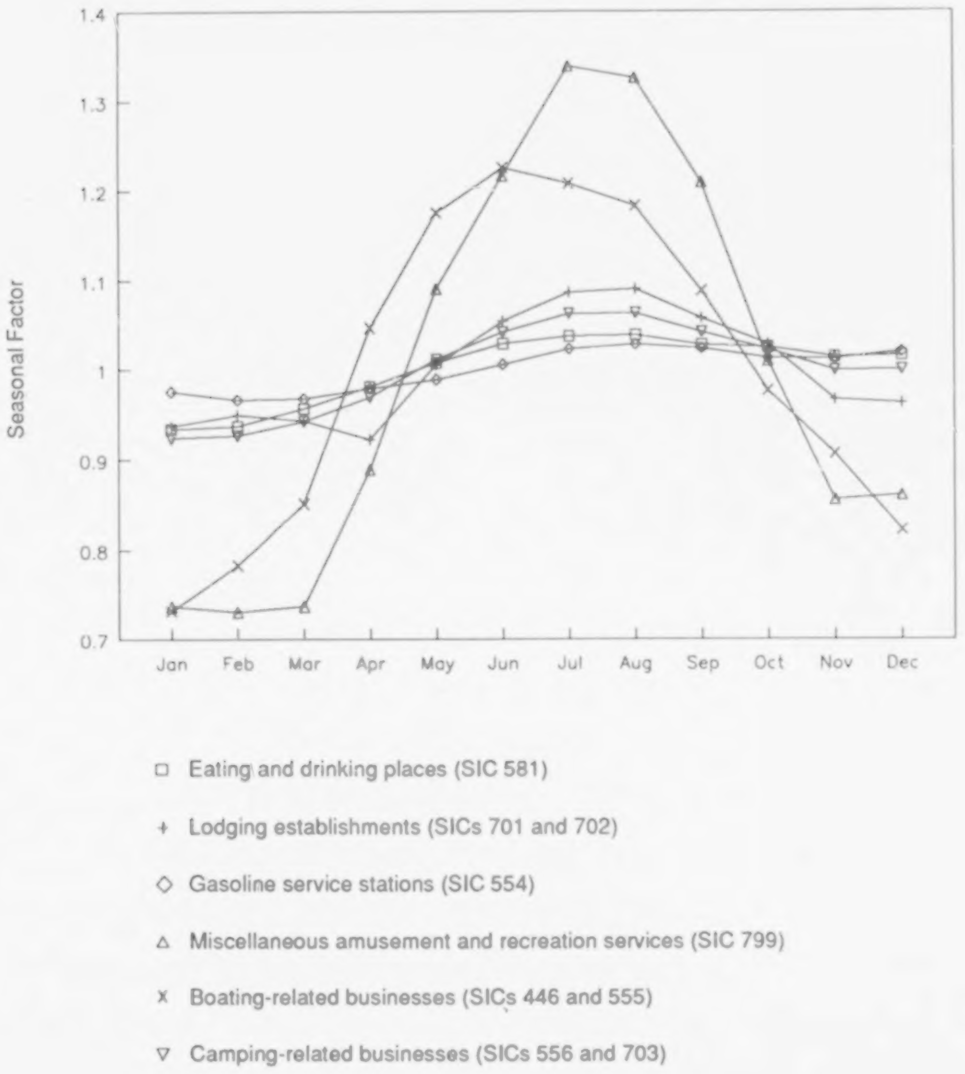


Figure 23-3. Seasonal factors in tourism-related employment in Michigan by sector, 1987.

Over three-quarters of the jobs in tourism-related businesses in Michigan are in eating and drinking places.

Table 23-13. Annual average number of jobs in tourism-related businesses by Michigan county, 1977-1987.

												AVERAGE ANNUAL CHANGE (PCT.)		
COUNTY	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1977-82	1982-87	1977-87
Alcona	190	189	173	158	174	186	194	194	213	229	268	-0.4	7.6	3.5
Alger	257	200	168	143	134	143	158	162	177	183	183	-11.1	5.1	-3.3
Allegan	1,110	1,250	1,082	1,105	1,147	1,188	1,211	1,221	1,300	1,375	1,476	1.4	4.4	2.9
Alpena	949	918	856	879	800	715	670	713	835	763	1,191	-5.5	10.7	2.3
Antrim	610	681	693	605	628	536	594	581	688	767	795	-2.6	8.2	2.7
Arenac	475	513	542	569	560	558	579	556	594	674	780	3.3	6.9	5.1
Baraga	156	176	159	150	148	130	143	134	159	158	184	-3.6	7.2	1.7
Barry	372	407	392	383	357	350	351	331	458	529	497	-1.2	7.3	2.9
Bay	2,770	2,852	2,759	2,720	2,890	2,752	2,838	2,710	2,677	3,064	3,340	-0.1	3.9	1.9
Benzie	280	315	310	306	348	343	385	395	451	437	510	4.1	8.3	6.2
Berrien	4,713	4,732	4,643	4,288	4,159	4,086	4,073	4,109	4,475	4,722	4,880	-2.8	3.6	0.3
Branch	631	717	693	604	553	491	493	543	483	525	608	-4.9	4.4	-0.4
Calhoun	4,618	3,986	4,062	4,119	4,182	3,893	3,793	4,054	4,324	4,501	4,652	-3.4	3.6	0.1
Cass	724	650	491	467	462	412	445	399	464	502	424	-10.7	0.6	-5.2
Charlevoix	906	833	1,010	890	821	882	874	894	889	969	1,042	-0.5	3.4	1.4
Cheboygan	759	827	792	769	837	821	867	826	933	1,019	977	1.6	3.5	2.6
Chippewa	734	952	684	652	662	685	697	659	743	969	1,275	-1.4	13.2	5.7
Clare	561	560	542	526	550	554	547	528	596	689	722	-0.3	5.4	2.6
Clinton	415	480	531	516	456	473	463	475	541	527	598	2.7	4.8	3.7
Crawford	464	418	499	517	527	574	528	539	661	640	660	4.3	2.8	3.6
Delta	1,226	788	707	696	706	717	898	857	926	856	1,122	-10.2	9.4	-0.9
Dickinson	516	612	586	587	659	627	609	614	666	629	806	4.0	5.2	4.6
Eaton	866	871	844	1,044	1,046	1,049	1,130	864	984	1,109	1,277	3.9	4.0	4.0
Emmet	1,172	1,347	1,226	1,098	1,048	1,024	1,009	1,014	1,139	1,118	1,007	-2.7	-0.3	-1.5
Genesee	9,949	9,997	9,879	11,000	10,956	10,183	10,412	10,761	12,331	12,804	14,009	0.5	6.6	3.5
Gladwin	275	334	311	305	287	308	333	392	423	425	415	2.3	6.1	4.2
Gogebic	492	630	633	828	852	790	779	760	785	811	761	9.9	-0.7	4.5
Grand Traverse	2,249	2,592	2,897	2,896	2,878	2,877	3,237	3,214	3,651	4,706	4,972	5.0	11.6	8.3
Gratiot	737	741	697	619	525	492	496	613	689	677	847	-7.8	11.5	1.4
Hillsdale	632	470	398	467	491	439	389	427	389	398	593	-7.0	6.2	-0.6
Houghton	736	1,249	892	753	784	744	735	730	921	920	1,178	0.2	9.6	4.8
Huron	602	540	623	639	615	653	683	708	728	722	815	1.6	4.5	3.1
Ingham	9,798	9,584	9,709	9,349	9,313	9,260	9,143	9,051	9,989	10,973	12,448	-1.1	6.1	2.4
Ionia	762	766	725	695	641	608	574	669	708	777	767	-4.4	4.8	0.1
Iosco	567	574	514	502	501	530	554	550	775	886	1,084	-1.3	15.4	6.7
Iron	312	307	343	289	284	260	296	303	336	349	336	-3.6	5.3	0.7
Isabella	1,517	1,604	1,556	1,581	1,611	1,456	1,456	1,539	1,526	1,577	1,802	-0.8	4.4	1.7
Jackson	3,515	3,837	4,090	4,116	4,223	3,994	3,835	3,903	4,212	4,249	3,505	2.6	-2.6	0.0
Kalamazoo	7,467	7,609	7,561	7,744	7,361	7,272	7,131	7,529	7,670	7,775	8,544	-0.5	3.3	1.4
Kalkaska	221	211	241	258	245	252	205	196	207	188	187	2.7	-5.8	-1.7
Kent	13,725	14,449	13,176	13,278	14,496	15,652	16,802	17,474	18,687	19,374	20,554	2.7	5.6	4.1
Keweenaw	64	70	65	60	77	68	62	69	78	82	105	1.2	9.1	5.1
Lake	111	108	115	103	94	103	98	109	110	122	159	-1.5	9.1	3.7
Lapeer	935	1,066	1,099	1,049	998	965	957	1,080	1,056	1,212	1,261	0.6	5.5	3.0
Leelanau	551	600	594	517	527	618	483	433	525	539	643	2.3	0.8	1.6
Lenawee	1,617	1,714	1,679	1,608	1,516	1,540	1,659	1,549	1,746	1,844	2,075	-1.0	6.1	2.5
Livingston	1,758	1,873	1,913	1,861	1,829	1,813	1,829	2,239	2,239	2,202	2,388	0.6	5.7	3.1

Luce	251	206	207	211	184	152	133	151	139	150	182	-9.5	3.7	-3.2
Mackinac	772	848	792	756	802	897	903	928	976	889	1,212	3.0	6.2	4.6
Macomb	14,787	15,653	19,946	18,585	15,725	15,472	15,887	16,857	18,501	18,435	19,413	0.9	4.6	2.8
Manistee	557	571	596	503	534	525	519	499	513	532	623	-1.2	3.5	1.1
Marquette	2,241	2,369	2,472	2,326	2,422	2,551	2,551	2,758	2,980	3,023	2,467	2.6	-0.7	1.0
Mason	808	763	688	690	655	598	649	622	612	636	670	-5.8	2.3	-1.9
Mecosta	561	592	627	637	648	655	731	701	704	731	873	3.1	5.9	4.5
Menominee	358	441	547	500	538	537	575	593	661	618	659	8.4	4.2	6.3
Midland	1,321	1,395	1,623	1,631	1,617	1,676	1,668	1,697	1,660	1,682	1,826	4.9	1.7	3.3
Missaukee	132	122	111	86	121	128	117	130	115	118	132	-0.6	0.6	0.0
Monroe	1,933	2,011	1,961	1,913	1,864	1,805	1,903	1,953	2,060	2,217	2,313	-1.4	5.1	1.8
Montcalm	720	754	723	797	818	822	843	844	929	990	1,052	2.7	5.1	3.9
Montmorency	216	265	216	229	241	219	212	232	278	226	320	0.3	7.9	4.0
Muskegon	3,137	3,371	3,454	3,679	3,631	3,705	3,605	3,722	3,787	4,036	4,066	3.4	1.9	2.6
Newaygo	360	415	423	413	453	467	497	563	595	465	547	5.3	3.2	4.3
Oakland	33,723	36,424	37,963	40,494	40,111	39,804	41,106	44,627	48,034	49,883	51,674	3.4	5.4	4.4
Oceana	300	360	363	466	463	400	400	421	421	402	404	5.9	0.2	3.0
Ogemaw	226	268	316	313	284	313	330	287	286	311	370	6.7	3.4	5.1
Ontonagon	208	198	174	193	217	217	189	157	176	200	240	0.9	2.0	1.4
Osceloa	237	229	255	257	250	240	253	193	226	225	243	0.3	0.2	0.3
Oscoda	105	90	100	92	93	91	118	113	90	106	130	-2.8	7.4	2.2
Otsego	757	840	858	778	837	809	811	756	742	677	806	1.3	-0.1	0.6
Ottawa	3,331	3,878	4,108	4,245	4,182	4,118	4,277	4,649	4,684	4,329	4,616	4.3	2.3	3.3
Presque Isle	167	184	166	143	176	165	165	174	227	245	241	-0.2	7.9	3.7
Roscommon	636	619	637	749	795	824	825	837	775	869	987	5.3	3.7	4.5
Saginaw	6,112	6,400	6,138	6,286	6,235	6,066	6,009	6,407	6,568	6,951	7,472	-0.2	4.3	2.0
Saint Clair	2,628	2,616	2,487	2,374	2,347	2,388	2,419	2,519	2,729	2,874	2,840	-1.9	3.5	0.8
Saint Joseph	1,039	1,217	1,255	1,310	1,365	1,376	1,289	1,497	1,381	1,351	1,479	5.8	1.5	3.6
Sanilac	369	408	414	406	363	350	346	337	460	426	493	-1.1	7.1	2.9
Schoolcraft	350	296	288	245	258	277	287	272	277	212	255	-4.6	-1.6	-3.1
Shiawassee	1,018	1,001	983	921	841	808	898	856	886	955	962	-4.5	3.6	-0.6
Tuscola	586	677	602	513	509	463	522	514	592	585	629	-4.6	6.3	0.7
Van Buren	780	853	852	806	830	948	1,020	910	1,104	1,251	1,290	4.0	6.4	5.2
Washtenaw	6,921	7,483	7,465	8,063	8,014	8,400	8,808	8,915	9,259	10,382	11,693	3.9	6.8	5.4
Wayne	57,975	59,625	58,021	56,085	54,357	51,844	52,370	53,636	56,519	55,538	58,281	-2.2	2.4	0.1
Wexford	817	772	833	760	712	776	711	811	837	934	1,048	-1.0	6.2	2.5
Unallocated	N.A.	N.A.	N.A.	6,430	5,893	6,657	8,470	9,645	10,476	11,365	10,850	N.A.	10.3	N.A.
Statewide	238,893	252,154	254,384	249,097	244,349	241,583	249,421	258,596	275,780	284,617	300,656	0.2	4.5	2.3

NOTE: "Tourism-related businesses" means businesses in SICs 446, 554, 555, 556, 581, 701, 702, 703, and 799.

SOURCE: Michigan Employment Security Commission.

Table 23-14. Number of jobs in tourism-related businesses as a percentage of all private-sector jobs by Michigan county by month, 1987.

COUNTY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE
Keweenaw	42.3	56.8	44.6	43.7	41.5	43.5	51.0	63.8	67.2	67.3	65.0	53.3	40.7
Mackinac	41.5	47.7	44.8	43.5	40.1	31.9	48.0	51.7	52.2	52.7	51.0	49.5	40.7
Montmorency	33.0	33.7	28.9	29.4	29.1	30.6	35.1	37.3	35.8	36.2	36.0	33.1	34.7
Roscommon	34.8	34.9	33.3	33.1	32.5	33.2	33.5	33.7	37.6	38.0	36.9	35.5	34.7
Alcona	28.5	28.2	23.4	24.5	23.7	25.9	28.3	30.1	31.8	31.7	29.1	29.7	29.7
Arenac	29.4	29.4	27.4	26.4	27.3	28.8	30.8	30.6	30.3	30.5	30.2	30.1	29.7
Leelanau	26.6	32.0	30.7	30.0	29.4	24.1	26.0	31.3	37.3	43.2	36.7	30.7	28.3
Crawford	26.6	28.1	26.6	26.5	26.2	26.4	28.2	29.2	30.3	30.7	30.5	27.7	26.7
Antrim	25.4	28.7	26.8	28.0	27.0	24.5	30.4	32.3	31.8	31.5	29.2	29.5	25.7
Chippewa	22.0	24.6	22.2	21.6	21.8	23.4	24.6	25.1	28.2	28.6	27.8	25.4	22.6
Oscoda	21.0	19.5	18.4	18.2	18.2	17.7	18.2	17.5	20.9	19.8	18.9	22.0	22.5
Lake	20.2	22.1	16.6	17.6	18.1	23.0	23.5	24.7	24.1	24.7	24.8	23.3	22.4
Iosco	20.2	23.7	21.5	21.6	21.9	23.9	25.0	25.4	26.4	26.6	25.8	22.7	22.0
Mecosta	18.1	18.9	17.4	17.4	17.3	18.1	18.6	19.7	21.2	20.4	20.3	19.0	18.7
Houghton	18.8	17.8	17.0	17.3	17.0	16.5	16.4	16.3	19.0	19.1	19.1	18.3	18.1
Gogebic	24.0	21.8	29.0	28.2	27.7	18.4	18.8	19.1	19.7	20.2	19.0	18.2	18.1
Luce	15.5	19.1	15.9	15.8	15.9	17.0	19.3	21.2	23.9	24.4	21.5	19.4	17.1
Benzie	20.4	23.1	24.2	24.5	24.4	19.7	22.0	25.1	26.8	28.6	22.5	19.5	16.6
Alpena	16.6	15.1	12.5	12.0	11.9	12.2	12.8	17.4	17.3	17.4	16.8	16.5	16.4
Gladwin	15.7	16.5	16.2	16.2	15.6	15.4	16.7	16.5	18.2	17.8	16.9	15.9	16.0
Cheboygan	14.7	21.0	14.8	15.1	15.5	15.6	21.9	24.4	28.4	28.0	26.6	22.2	15.9
Isabella	15.7	15.0	14.1	14.3	14.4	15.0	14.8	14.4	14.9	15.5	15.8	15.4	15.6
Grand Traverse	16.0	16.7	15.5	15.7	15.6	16.1	17.0	18.0	18.1	18.4	18.1	16.2	15.6
Iron	15.9	16.7	18.4	18.5	18.1	16.1	16.0	16.6	17.4	17.1	16.0	15.2	15.6
Clare	15.1	16.5	16.6	16.9	16.2	17.0	17.4	17.2	17.2	17.5	17.1	15.1	15.0
Marquette	15.2	15.2	15.3	15.0	15.2	14.8	15.3	15.1	15.7	15.5	15.5	15.4	15.0
Schoolcraft	12.4	16.6	14.3	12.4	14.3	16.0	17.4	18.9	19.3	19.7	19.6	17.9	14.9
Charlevoix	19.2	21.0	22.9	23.3	22.7	15.7	19.7	23.1	25.2	25.3	21.6	17.2	14.9
Otsego	13.9	15.1	15.2	14.9	14.3	13.8	15.2	16.0	17.0	16.6	15.4	15.1	13.7
Manistee	11.5	13.1	11.1	11.2	11.3	12.0	13.9	14.4	15.0	16.2	14.5	12.8	12.3
Bay	11.8	12.2	10.9	11.2	11.4	12.1	12.4	12.8	13.2	13.2	13.1	12.2	12.1
Delta	11.5	12.1	11.3	11.4	11.7	11.5	11.9	12.3	13.4	13.6	13.1	12.0	11.8
Livingston	12.4	12.4	13.0	13.0	12.4	12.3	12.6	12.7	12.7	12.6	12.1	11.5	11.7
Wexford	11.6	12.2	11.7	11.4	11.5	11.7	12.4	13.3	13.3	12.9	12.4	12.1	11.7
Oceana	11.5	13.6	10.3	9.5	11.0	12.9	14.4	16.1	15.7	16.4	15.5	12.8	11.7
Ingham	10.9	10.9	10.1	10.2	10.5	10.9	11.2	11.2	11.2	11.2	10.9	11.1	11.2
Clinton	11.9	10.5	9.7	9.5	9.6	10.4	10.5	10.9	10.8	10.8	10.5	10.6	11.1
Menominee	10.6	10.8	9.3	9.4	9.8	10.5	11.0	10.6	11.7	12.2	11.6	11.3	11.1
Lapeer	10.9	11.4	11.6	11.8	11.5	11.7	12.0	12.1	11.3	11.2	11.4	10.9	10.9
Mason	10.4	11.4	8.8	8.5	8.8	11.1	12.1	12.2	13.1	13.9	13.5	11.8	10.8
Missaukee	10.9	12.3	10.9	10.6	10.8	12.0	13.0	12.7	14.5	14.5	14.2	11.2	10.8
Washtenaw	10.6	10.9	10.2	10.2	10.4	11.1	11.1	11.2	11.7	11.3	11.2	10.8	10.7
Calhoun	10.6	10.8	10.2	10.2	10.3	10.7	11.0	11.0	11.0	11.4	11.3	10.8	10.6
Alger	9.9	11.2	8.7	8.8	9.1	9.7	11.8	12.7	13.3	14.7	12.7	12.0	10.5
Oakland	10.5	10.6	10.3	10.5	10.5	10.6	10.8	10.9	11.0	10.9	10.7	10.6	10.5
Eaton	10.6	11.1	11.1	11.1	11.5	10.9	11.1	11.6	10.9	11.4	11.6	11.1	10.5

Emmet	10.1	12.5	12.2	12.1	11.7	10.8	12.1	13.4	15.4	15.1	13.6	12.6	10.4
Kalamazoo	10.4	10.1	9.6	9.9	10.0	10.1	9.8	9.9	10.0	10.1	10.0	10.4	10.4
Saginaw	10.2	10.3	9.6	9.7	9.8	10.2	10.5	10.7	10.7	10.9	10.8	10.3	10.4
Genesee	10.3	9.7	9.1	8.9	9.0	9.3	9.7	9.5	9.9	10.1	10.0	10.1	10.3
Baraga	9.8	11.9	11.3	11.1	11.8	14.1	13.8	13.6	11.8	12.4	12.0	10.9	10.3
Ontonagon	9.8	10.5	9.6	9.9	10.3	10.5	11.0	10.9	11.1	11.4	10.7	11.0	10.2
Van Buren	9.4	10.0	10.2	10.3	10.3	9.5	10.0	9.9	10.1	10.2	10.2	9.8	9.9
Dickinson	10.4	10.0	10.1	9.6	9.7	10.1	10.2	10.8	10.3	10.0	9.6	9.7	9.9
Ogemaw	9.7	9.4	8.4	8.3	8.9	9.1	8.8	8.7	10.1	10.1	10.6	10.1	9.6
Presque Isle	9.6	11.2	12.0	11.0	10.7	10.6	11.7	11.5	12.7	12.2	12.2	10.4	9.6
Monroe	9.4	10.1	9.3	9.3	9.7	10.0	10.2	10.7	11.5	11.0	10.7	9.8	9.6
Newaygo	9.7	9.8	8.9	8.9	9.0	10.1	10.9	10.4	10.5	9.9	9.8	9.3	9.5
Huron	9.1	10.3	8.2	8.4	8.9	9.6	10.6	11.2	13.3	13.0	11.9	10.1	9.4
Saint Clair	9.5	9.9	9.3	9.4	9.8	10.2	10.7	10.8	10.3	10.2	9.9	9.7	9.4
Berrien	8.8	9.1	8.1	8.0	8.7	9.1	9.5	9.7	9.8	9.7	9.4	9.2	8.8
Kent	8.8	9.1	9.0	9.1	9.1	9.1	9.3	9.4	9.5	9.4	9.3	9.1	8.7
Macomb	8.6	8.6	8.1	8.2	8.4	8.5	8.6	8.8	9.1	8.9	8.8	8.7	8.6
Lenawee	8.7	9.0	7.7	7.9	8.1	9.2	9.5	9.6	10.1	10.2	9.5	8.9	8.6
Saint Joseph	8.2	8.2	7.7	7.8	8.1	8.2	8.9	8.7	6.8	8.8	8.6	8.7	8.5
Barry	8.2	8.1	6.7	7.0	7.5	8.2	8.8	9.0	8.4	8.3	8.5	8.2	8.4
Muskegon	8.1	8.7	8.1	8.1	8.3	8.4	8.8	9.2	9.9	9.9	9.1	8.4	8.2
Jackson	8.1	8.7	8.7	8.1	8.2	8.5	9.0	9.1	9.2	9.3	9.1	8.6	8.1
Tuscola	7.8	8.7	7.8	8.0	8.4	9.1	9.4	9.5	9.4	9.2	9.3	8.1	8.0
Kalkaska	7.8	7.9	6.9	6.6	6.7	7.1	7.2	7.9	9.8	9.0	9.3	8.5	7.9
Montcalm	7.8	8.7	8.2	8.1	8.5	8.9	9.1	9.3	9.4	9.4	8.7	8.4	7.9
Ionia	7.5	8.2	7.4	7.6	7.9	8.2	8.3	8.4	9.3	9.1	8.8	8.1	7.8
Wayne	7.6	7.7	7.4	7.4	7.5	7.6	7.7	7.8	8.1	7.8	7.6	7.7	7.6
Ottawa	7.4	7.7	7.3	7.3	7.4	7.6	8.0	8.2	8.0	8.0	8.1	7.7	7.6
Gratiot	7.6	8.3	8.3	8.5	8.5	8.6	8.7	8.9	8.6	8.5	8.5	7.7	7.6
Shiawassee	7.2	8.5	8.5	8.4	8.7	8.1	8.8	8.7	9.1	9.4	9.0	8.1	7.6
Osceloa	6.8	6.8	6.6	6.6	6.7	6.7	7.0	6.9	6.7	6.5	6.4	7.0	7.1
Midland	7.2	7.4	7.3	7.4	7.3	7.6	7.8	7.9	7.5	7.5	7.5	7.1	7.0
Branch	6.5	7.3	6.5	6.3	6.6	7.6	7.9	8.1	8.0	8.2	7.7	6.7	6.7
Allegan	6.3	7.5	6.0	5.9	6.3	7.4	8.7	9.0	9.1	8.8	8.5	7.4	6.4
Hillsdale	6.6	6.6	5.6	5.6	6.1	6.4	6.5	6.3	6.7	6.8	7.4	8.5	6.1
Sanilac	5.5	6.3	5.0	5.3	5.7	6.9	7.5	7.3	6.9	7.0	6.7	5.9	5.7
Cass	5.5	6.2	7.1	7.0	6.7	6.2	6.4	6.4	6.3	6.2	5.8	5.6	5.4
Unallocated	16.0	16.3	16.9	16.9	17.3	16.1	16.8	17.0	15.6	15.7	15.6	15.3	16.1
Statewide	9.6	9.8	9.3	9.3	9.4	9.6	9.9	10.1	10.4	10.3	10.0	9.8	9.7

NOTE: Counties are ranked according to their value in the "Annual Average" column. "Tourism-related businesses" means businesses in SICs 446, 554, 555, 556, 581, 701, 702, 703, and 799.

SOURCE: Michigan Employment Security Commission.

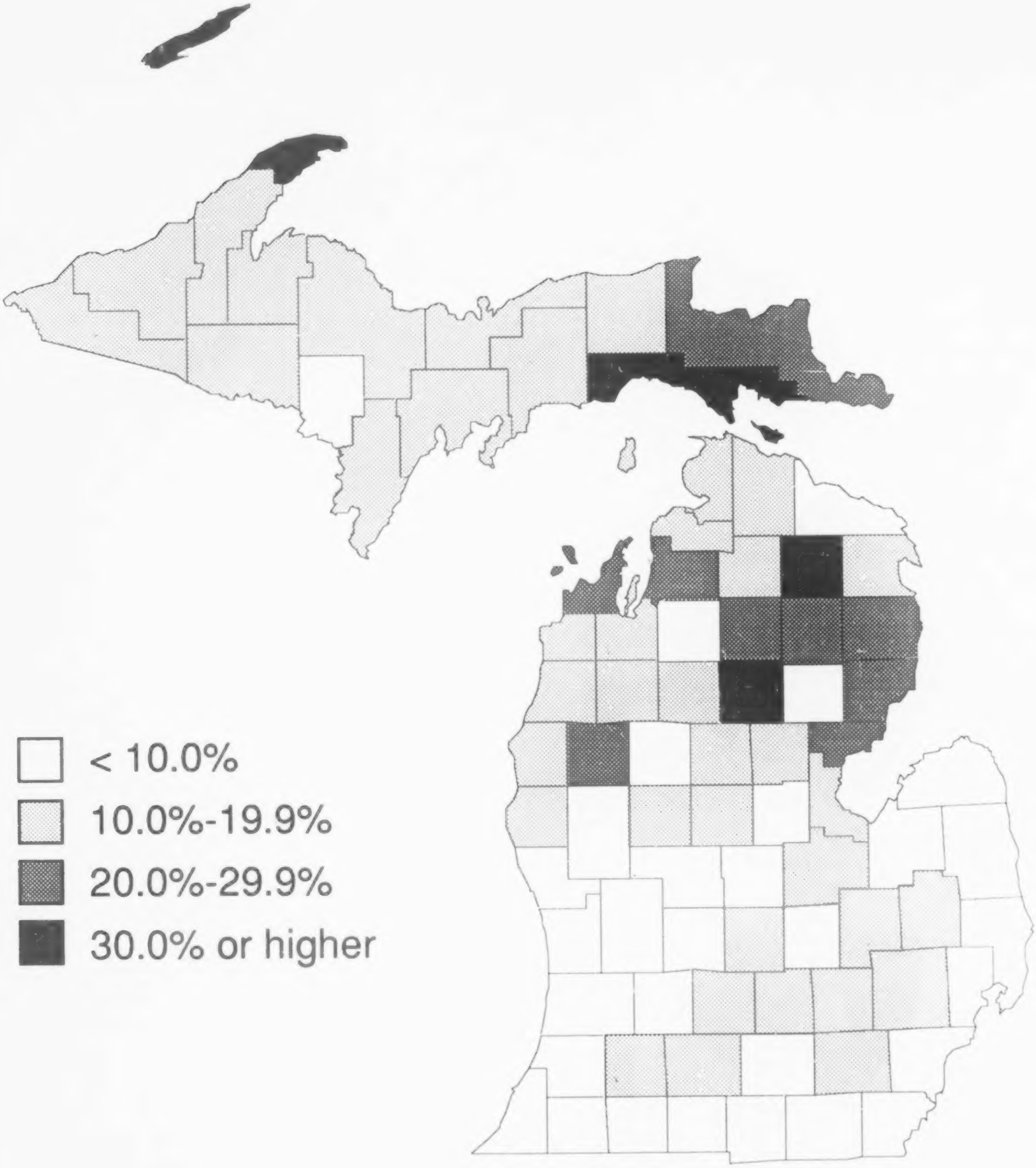
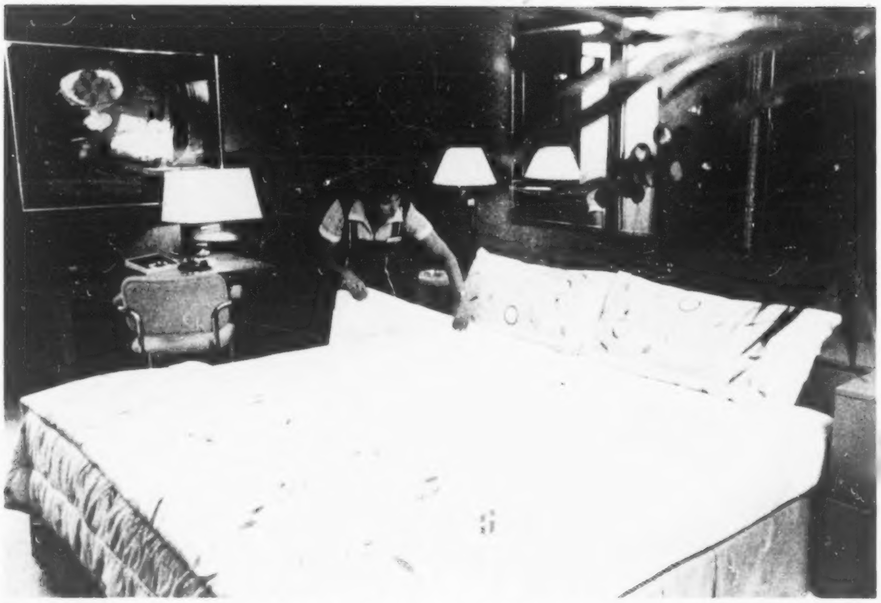

< 10.0%
10.0%-19.9%
20.0%-29.9%
30.0% or higher

Figure 23-4. Employment in tourism-related businesses as a percentage of total private-sector employment, by Michigan county, 1987.



Next to eating and drinking places, lodging establishments provide the highest percentage of jobs in tourism-related businesses in Michigan.

Table 23-15. Total number of jobs in tourism-related businesses by Michigan county by month, 1987.

COUNTY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE
Alcona	204	213	205	237	267	298	329	333	291	293	286	256	268
Alger	141	141	145	148	189	208	232	258	213	198	168	151	183
Allegan	1,100	1,088	1,181	1,445	1,741	1,823	1,872	1,813	1,708	1,458	1,257	1,223	1,476
Alpena	870	850	860	911	985	1,406	1,426	1,446	1,394	1,383	1,369	1,390	1,191
Antrim	720	714	681	612	840	930	1,025	1,065	892	803	641	621	795
Arenac	685	658	673	742	829	842	870	875	841	813	783	747	780
Baraga	165	160	171	206	215	220	183	195	185	179	167	159	184
Barry	386	399	431	493	537	567	541	528	542	513	511	510	497
Bay	2,895	2,924	2,998	3,233	3,371	3,528	3,638	3,706	3,687	3,446	3,401	3,258	3,340
Benzie	475	453	456	374	459	584	765	765	566	443	346	434	510
Berrien	4,166	4,105	4,502	4,802	5,086	5,378	5,520	5,491	5,278	4,923	4,648	4,663	4,880
Branch	511	498	533	639	672	700	690	710	667	572	557	544	608
Calhoun	4,305	4,246	4,341	4,591	4,805	4,851	4,843	4,998	4,945	4,649	4,618	4,635	4,652
Cass	466	465	447	417	437	449	432	431	414	395	365	373	424
Charlevoix	1,064	1,073	1,048	700	945	1,192	1,386	1,402	1,104	882	729	979	1,042
Cheboygan	569	576	600	646	1,052	1,254	1,602	1,582	1,432	1,108	694	611	977
Chippewa	1,017	986	1,014	1,149	1,279	1,345	1,617	1,655	1,546	1,409	1,184	1,095	1,275
Clare	663	665	643	709	755	762	798	816	792	701	686	679	722
Clinton	536	519	531	589	602	625	608	617	610	608	643	690	598
Crawford	588	568	567	603	669	727	769	776	760	653	626	616	660
Delta	1,002	1,011	1,033	1,017	1,086	1,129	1,298	1,341	1,260	1,140	1,089	1,053	1,122
Dickinson	782	746	753	793	827	864	833	818	795	805	814	843	806
Eaton	1,205	1,209	1,259	1,197	1,245	1,362	1,296	1,360	1,382	1,316	1,245	1,244	1,277
Emmet	911	893	865	818	960	1,113	1,366	1,338	1,129	1,055	834	797	1,007
Genesee	13,234	13,197	13,234	13,789	14,024	14,352	14,285	14,363	14,180	14,326	14,486	14,635	14,009
Gladwin	387	382	366	369	405	417	483	480	455	416	413	402	415
Gogebic	1,071	1,042	996	588	629	660	668	690	659	623	621	890	761
Grand Traverse	4,268	4,301	4,320	4,557	4,964	5,400	5,899	5,859	5,605	4,961	4,735	4,800	4,972
Gratiot	760	810	824	839	851	876	894	929	920	825	820	819	847
Hillsdale	496	505	550	575	593	576	613	616	670	782	548	591	593
Houghton	1,049	1,072	1,051	1,049	1,082	1,087	1,311	1,336	1,341	1,259	1,228	1,269	1,178
Huron	627	647	670	758	858	923	1,055	1,042	949	799	742	707	815
Ingham	11,380	11,559	11,762	12,375	12,950	12,984	12,492	12,659	12,649	12,894	12,952	12,716	12,448
Ionia	666	679	714	753	783	799	873	867	834	780	738	723	767
Iosco	867	863	908	1,050	1,155	1,217	1,336	1,333	1,271	1,073	1,023	910	1,084
Iron	351	344	334	311	323	351	365	359	337	314	319	321	336
Isabella	1,611	1,659	1,664	1,677	1,673	1,640	1,848	1,930	1,988	1,966	1,984	1,984	1,802
Jackson	3,381	3,120	3,211	3,403	3,654	3,695	3,773	3,842	3,757	3,503	3,360	3,357	3,505
Kalamazoo	7,891	8,146	8,275	8,440	8,219	8,382	8,493	8,651	8,667	9,040	9,148	9,176	8,544
Kalkaska	152	148	151	156	170	197	232	223	227	214	191	182	187
Kent	19,520	19,632	19,988	20,112	20,707	21,068	21,285	21,423	21,363	21,082	20,079	20,387	20,554
Keweenaw	54	52	49	54	79	157	215	220	195	90	46	47	105
Lake	106	107	110	159	169	186	190	194	198	180	173	141	159
Lapeer	1,194	1,188	1,202	1,250	1,296	1,328	1,321	1,345	1,326	1,265	1,230	1,189	1,261
Leelanau	518	497	471	385	459	749	1,061	1,102	844	648	524	458	643
Lenawee	1,761	1,818	1,853	2,102	2,224	2,251	2,287	2,342	2,244	2,049	1,976	1,991	2,075

Livingston	2,351	2,315	2,212	2,279	2,386	2,442	2,474	2,511	2,412	2,326	2,373	2,571	2,388
Luce	133	131	128	147	177	207	257	266	224	197	170	151	182
Mackinac	667	638	600	528	1,332	1,907	2,136	2,139	1,772	1,401	730	696	1,212
Macomb	18,048	18,236	18,730	19,047	19,555	19,996	20,172	19,963	19,990	19,918	19,624	19,673	19,413
Manistee	473	474	490	529	646	697	773	827	756	665	592	556	623
Marquette	2,386	2,324	2,357	2,333	2,479	2,440	2,587	2,605	2,572	2,557	2,473	2,494	2,467
Mason	468	440	453	613	699	739	880	907	870	737	642	597	670
Mecosta	721	732	731	798	852	929	1,028	998	994	924	901	862	873
Menominee	559	562	578	614	654	633	732	770	742	705	695	668	659
Midland	1,766	1,763	1,747	1,819	1,902	1,946	1,858	1,887	1,897	1,769	1,761	1,801	1,826
Missaukee	93	92	96	125	146	150	181	176	165	130	119	107	132
Monroe	2,056	2,080	2,178	2,309	2,337	2,460	2,499	2,561	2,513	2,303	2,241	2,214	2,313
Montcalm	975	961	986	1,071	1,117	1,128	1,133	1,142	1,067	1,058	1,000	984	1,052
Montmorency	217	220	217	266	349	395	398	397	387	337	343	311	320
Muskegon	3,653	3,658	3,749	3,827	4,041	4,313	4,720	4,732	4,384	4,008	3,888	3,815	4,066
Newaygo	451	442	458	537	571	579	624	626	625	565	550	535	547
Oakland	49,339	49,828	50,001	50,360	52,248	53,088	53,773	53,472	52,462	52,212	51,577	51,726	51,674
Oceana	227	213	248	333	464	558	618	612	533	393	341	307	404
Ogemaw	311	308	326	339	346	362	417	415	430	409	389	385	370
Ontonagon	207	215	223	225	245	252	271	272	256	254	237	226	240
Osceloa	215	220	229	238	249	248	239	236	231	270	275	260	243
Oscoda	110	108	107	108	114	116	147	138	130	167	169	151	130
Otsego	754	734	711	693	803	864	962	952	877	830	741	751	806
Ottawa	4,131	4,100	4,227	4,429	4,754	4,890	4,971	5,038	5,057	4,736	4,587	4,472	4,616
Presque Isle	202	201	202	217	244	261	301	293	282	235	228	221	241
Roscommon	815	806	804	874	931	983	1,198	1,208	1,135	1,069	1,018	999	987
Saginaw	6,766	6,815	6,898	7,274	7,555	7,796	7,805	8,006	7,969	7,574	7,665	7,538	7,472
Saint Clair	2,604	2,624	2,713	2,864	3,027	3,128	2,966	2,938	2,882	2,842	2,719	2,769	2,840
Saint Joseph	1,359	1,365	1,427	1,452	1,527	1,530	1,524	1,538	1,504	1,561	1,508	1,448	1,479
Sanilac	372	386	417	523	578	582	567	577	532	478	466	440	493
Schoolcraft	194	159	184	233	269	309	327	338	325	296	232	191	255
Shiawassee	954	933	972	919	1,013	1,015	1,041	1,075	1,039	920	854	813	962
Tuscola	558	558	578	643	672	693	689	680	682	622	601	577	629
Van Buren	1,120	1,143	1,171	1,160	1,264	1,366	1,554	1,537	1,448	1,313	1,254	1,144	1,290
Washtenaw	10,714	10,751	11,024	11,790	11,910	12,094	12,210	12,308	12,322	11,789	11,696	11,713	11,693
Wayne	55,732	55,909	57,099	57,732	58,835	59,684	60,000	58,945	58,325	59,398	58,740	58,971	58,281
Wexford	957	926	941	975	1,058	1,166	1,164	1,155	1,097	1,070	1,035	1,035	1,048
Unallocated	10,630	10,645	10,873	10,456	10,663	10,955	10,642	10,699	10,628	11,061	11,418	11,533	10,850
Statewide	277,648	278,536	283,237	291,350	303,989	313,139	319,359	319,569	313,097	307,312	300,252	300,385	300,656

NOTE: "Tourism-related businesses" means businesses in SICs 446, 554, 555, 556, 581, 701, 702, 703, and 799.

SOURCE: Michigan Employment Security Commission.

Table 23-16. Seasonal factors in tourism-related employment by Michigan county by month, 1987.

COUNTY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MAX-MIN	RANK
Keweenaw	0.52	0.50	0.47	0.52	0.75	1.50	2.05	2.10	1.86	0.86	0.44	0.45	1.66	1
Mackinac	0.55	0.53	0.49	0.44	1.10	1.57	1.76	1.76	1.46	1.16	0.60	0.57	1.32	2
Leelanau	0.81	0.77	0.73	0.60	0.71	1.16	1.65	1.71	1.31	1.01	0.81	0.71	1.11	3
Cheboygan	0.58	0.59	0.61	0.66	1.08	1.28	1.64	1.62	1.47	1.13	0.71	0.63	1.06	4
Oceana	0.56	0.53	0.61	0.82	1.15	1.38	1.53	1.52	1.32	0.97	0.84	0.76	1.00	5
Benzie	0.93	0.89	0.89	0.73	0.90	1.15	1.50	1.50	1.11	0.87	0.68	0.85	0.82	6
Luce	0.73	0.72	0.70	0.81	0.97	1.14	1.41	1.46	1.23	1.08	0.93	0.83	0.76	7
Schoolcraft	0.76	0.62	0.72	0.91	1.06	1.21	1.28	1.33	1.28	1.16	0.91	0.75	0.71	8
Mason	0.70	0.66	0.68	0.91	1.04	1.10	1.31	1.35	1.30	1.10	0.96	0.89	0.69	9
Charlevoix	1.02	1.03	1.01	0.67	0.91	1.14	1.33	1.35	1.06	0.85	0.70	0.94	0.68	10
Missaukee	0.71	0.70	0.73	0.95	1.11	1.14	1.37	1.34	1.25	0.99	0.90	0.81	0.67	11
Alger	0.77	0.77	0.79	0.81	1.03	1.14	1.27	1.41	1.17	1.08	0.92	0.83	0.64	12
Gogebic	1.41	1.37	1.31	0.77	0.83	0.87	0.88	0.91	0.87	0.82	0.82	1.17	0.64	13
Lake	0.66	0.67	0.69	1.00	1.06	1.17	1.19	1.22	1.24	1.13	1.09	0.88	0.58	14
Emmet	0.91	0.89	0.86	0.81	0.95	1.11	1.36	1.33	1.12	1.05	0.83	0.79	0.57	15
Manistee	0.76	0.76	0.79	0.85	1.04	1.12	1.24	1.33	1.21	1.07	0.95	0.89	0.57	16
Antrim	0.91	0.90	0.86	0.77	1.06	1.17	1.29	1.34	1.12	1.01	0.81	0.78	0.57	17
Montmorency	0.68	0.69	0.68	0.83	1.09	1.24	1.24	1.24	1.21	1.05	1.07	0.97	0.56	18
Allegan	0.75	0.74	0.80	0.98	1.18	1.24	1.27	1.23	1.16	0.99	0.85	0.83	0.53	19
Chippewa	0.80	0.77	0.80	0.90	1.00	1.06	1.27	1.30	1.21	1.11	0.93	0.86	0.53	20
Huron	0.77	0.79	0.82	0.93	1.05	1.13	1.29	1.28	1.16	0.98	0.91	0.87	0.52	21
Alpena	0.73	0.71	0.72	0.77	0.83	1.18	1.20	1.21	1.17	1.16	1.15	1.17	0.50	22
Oscoda	0.84	0.83	0.82	0.83	0.87	0.89	1.13	1.06	1.00	1.28	1.30	1.16	0.48	23
Hillsdale	0.84	0.85	0.93	0.97	1.00	0.97	1.03	1.04	1.13	1.32	0.92	1.00	0.48	24
Alcona	0.76	0.80	0.77	0.89	1.00	1.11	1.23	1.24	1.09	1.09	1.07	0.96	0.48	25
Kalkaska	0.81	0.79	0.81	0.83	0.91	1.05	1.24	1.19	1.21	1.14	1.02	0.97	0.45	26
Iosco	0.80	0.80	0.84	0.97	1.07	1.12	1.23	1.23	1.17	0.99	0.94	0.84	0.43	27
Sanilac	0.75	0.78	0.85	1.06	1.17	1.18	1.15	1.17	1.08	0.97	0.94	0.89	0.43	28
Presque Isle	0.84	0.84	0.84	0.90	1.01	1.08	1.25	1.22	1.17	0.98	0.95	0.92	0.41	29
Roscommon	0.83	0.82	0.81	0.89	0.94	1.00	1.21	1.22	1.15	1.08	1.03	1.01	0.41	30
Barry	0.78	0.80	0.87	0.99	1.08	1.14	1.09	1.06	1.09	1.03	1.03	1.03	0.36	31
Mecosta	0.83	0.84	0.84	0.91	0.98	1.06	1.18	1.14	1.14	1.06	1.03	0.99	0.35	32
Branch	0.84	0.82	0.88	1.05	1.11	1.15	1.14	1.17	1.10	0.94	0.92	0.90	0.35	33
Van Buren	0.87	0.89	0.91	0.90	0.98	1.06	1.21	1.19	1.12	1.02	0.97	0.89	0.34	34
Ogemaw	0.84	0.83	0.88	0.92	0.94	0.98	1.13	1.12	1.16	1.11	1.05	1.04	0.33	35
Otsego	0.94	0.91	0.88	0.86	1.00	1.07	1.19	1.18	1.09	1.03	0.92	0.93	0.33	36
Grand Traverse	0.86	0.86	0.87	0.92	1.00	1.09	1.19	1.18	1.13	1.00	0.95	0.97	0.33	37
Baraga	0.90	0.87	0.93	1.12	1.17	1.20	1.00	1.06	1.01	0.97	0.91	0.87	0.33	38
Newaygo	0.82	0.81	0.84	0.98	1.04	1.06	1.14	1.14	1.14	1.03	1.01	0.98	0.33	39
Crawford	0.89	0.86	0.86	0.91	1.01	1.10	1.16	1.18	1.15	0.99	0.95	0.93	0.32	40
Menominee	0.85	0.85	0.88	0.93	0.99	0.96	1.11	1.17	1.13	1.07	1.05	1.01	0.32	41
Delta	0.89	0.90	0.92	0.91	0.97	1.01	1.16	1.20	1.12	1.02	0.97	0.94	0.31	42
Gladwin	0.93	0.92	0.88	0.89	0.98	1.01	1.17	1.16	1.10	1.00	1.00	0.97	0.29	43
Berrien	0.85	0.84	0.92	0.98	1.04	1.10	1.13	1.13	1.08	1.01	0.95	0.96	0.29	44
Arenac	0.88	0.84	0.86	0.95	1.06	1.08	1.12	1.12	1.08	1.04	1.00	0.96	0.28	45
Shiawasse	0.99	0.97	1.01	0.95	1.05	1.05	1.08	1.12	1.08	0.96	0.89	0.84	0.28	46
Clinton	0.90	0.87	0.89	0.98	1.01	1.04	1.02	1.03	1.02	1.02	1.07	1.15	0.28	47
Lenawee	0.85	0.88	0.89	1.01	1.07	1.08	1.10	1.13	1.08	0.99	0.95	0.96	0.28	48

Ionia	0.87	0.88	0.93	0.98	1.02	1.04	1.14	1.13	1.09	1.02	0.96	0.94	0.27	49
Ontonagon	0.86	0.89	0.93	0.94	1.02	1.05	1.13	1.13	1.07	1.06	0.99	0.94	0.27	50
Muskegon	0.90	0.90	0.92	0.94	0.99	1.06	1.16	1.16	1.08	0.99	0.96	0.94	0.26	51
Houghton	0.89	0.91	0.89	0.89	0.92	0.92	1.11	1.13	1.14	1.07	1.04	1.08	0.25	52
Cass	1.10	1.10	1.05	0.98	1.03	1.06	1.02	1.02	0.98	0.93	0.86	0.88	0.24	53
Bay	0.87	0.88	0.90	0.97	1.01	1.06	1.09	1.11	1.10	1.03	1.02	0.98	0.24	54
Clare	0.92	0.92	0.89	0.98	1.05	1.05	1.10	1.13	1.10	0.97	0.95	0.94	0.24	55
Osceola	0.89	0.91	0.94	0.98	1.03	1.02	0.99	0.97	0.95	1.11	1.13	1.07	0.24	56
Wexford	0.91	0.88	0.90	0.93	1.01	1.11	1.11	1.10	1.05	1.02	0.99	0.99	0.23	57
Monroe	0.89	0.90	0.94	1.00	1.01	1.06	1.08	1.11	1.09	1.00	0.97	0.96	0.22	58
Jackson	0.96	0.89	0.92	0.97	1.04	1.05	1.08	1.10	1.07	1.00	0.96	0.96	0.21	59
Tuscola	0.89	0.89	0.92	1.02	1.07	1.10	1.09	1.08	1.08	0.99	0.95	0.92	0.21	60
Isabella	0.89	0.92	0.92	0.93	0.93	0.91	1.03	1.07	1.10	1.09	1.10	1.10	0.21	61
Ottawa	0.89	0.89	0.92	0.96	1.03	1.06	1.08	1.09	1.10	1.03	0.99	0.97	0.21	62
Gratiot	0.90	0.96	0.97	0.99	1.00	1.03	1.06	1.10	1.09	0.97	0.97	0.97	0.20	63
Saint Clair	0.92	0.92	0.96	1.01	1.07	1.10	1.04	1.03	1.01	1.00	0.96	0.98	0.18	64
Montcalm	0.93	0.91	0.94	1.02	1.06	1.07	1.08	1.09	1.01	1.01	0.95	0.94	0.18	65
Calhoun	0.93	0.91	0.93	0.99	1.03	1.04	1.04	1.07	1.06	1.00	0.99	1.00	0.16	66
Iron	1.05	1.02	0.99	0.93	0.96	1.05	1.09	1.07	1.00	0.94	0.95	0.96	0.16	67
Saginaw	0.91	0.91	0.92	0.97	1.01	1.04	1.04	1.07	1.07	1.01	1.03	1.01	0.16	68
Livingston	0.98	0.97	0.93	0.95	1.00	1.02	1.04	1.05	1.01	0.97	0.99	1.08	0.15	69
Kalamazoo	0.92	0.95	0.97	0.99	0.96	0.98	0.99	1.01	1.01	1.06	1.07	1.07	0.15	70
Eaton	0.94	0.95	0.99	0.94	0.98	1.07	1.02	1.07	1.08	1.03	0.98	0.97	0.14	71
Saint Joseph	0.92	0.92	0.97	0.98	1.03	1.03	1.03	1.04	1.02	1.06	1.02	0.98	0.14	72
Dickinson	0.97	0.93	0.93	0.98	1.03	1.07	1.03	1.01	0.99	1.00	1.01	1.05	0.14	73
Lapeer	0.95	0.94	0.95	0.99	1.03	1.05	1.05	1.07	1.05	1.00	0.98	0.94	0.13	74
Washtenaw	0.92	0.92	0.94	1.01	1.02	1.03	1.04	1.05	1.05	1.01	1.00	1.00	0.13	75
Ingham	0.91	0.93	0.94	0.99	1.04	1.04	1.00	1.02	1.02	1.04	1.04	1.02	0.13	76
Marquette	0.97	0.94	0.96	0.95	1.00	0.99	1.05	1.06	1.04	1.04	1.00	1.01	0.12	77
Midland	0.97	0.97	0.96	1.00	1.04	1.07	1.02	1.03	1.04	0.97	0.96	0.99	0.11	78
Macomb	0.93	0.94	0.96	0.98	1.01	1.03	1.04	1.03	1.03	1.03	1.01	1.01	0.11	79
Genesee	0.94	0.94	0.94	0.98	1.00	1.02	1.02	1.03	1.01	1.02	1.03	1.04	0.10	80
Kent	0.95	0.96	0.97	0.98	1.01	1.03	1.04	1.04	1.04	1.03	0.98	0.99	0.09	81
Oakland	0.95	0.96	0.97	0.97	1.01	1.03	1.04	1.03	1.02	1.01	1.00	1.00	0.09	82
Wayne	0.96	0.96	0.98	0.99	1.01	1.02	1.03	1.01	1.00	1.02	1.01	1.01	0.07	83
Unallocated	0.98	0.98	1.00	0.96	0.98	1.01	0.98	0.99	0.98	1.02	1.05	1.06	0.10	
Statewide	0.93	0.93	0.94	0.97	1.01	1.04	1.06	1.07	1.04	1.02	0.99	0.99	0.14	

NOTE: Counties are ranked by the difference between a given county's highest and lowest seasonal factor. Seasonal factors are equal to monthly employment divided by average annual employment in a given county.

SOURCE: Michigan Employment Security Commission.

ranked by their January seasonal factors. The results, shown in Table 23-17, revealed that Gogebic, Charlevoix, Benzie, Emmet, and Antrim Counties all had significant seasonal variation in tourism-related employment, and tourism-related employment in January at least 90% of the annual average. The seasonal factors for these counties peaked in July or August, but also show a smaller rise in January and February, reaching their lowest levels typically in April or November. The presence of major downhill ski areas in each of these counties probably accounts for much of this winter peaking in tourism employment.

It should be noted that counties with year-round tourism activity will not be identified from seasonal fluctuations in employment. Grand Traverse County is a good example. Although tourism is an important part of its economy, tourism-related employment in this county fluctuates during the year by less than plus or minus 20%. Moreover, Grand Traverse County ranks 37th based upon seasonality in 1987 tourism-related employment (Table 23-16). Large resident populations relative to the number of tourists also dampen the fluctuation in employment due to seasonality in tourism activity. On the other hand, in many northern counties a seasonal out-migration of residents adds to the decline in employment during the winter.

In Tables 23-18 through 23-25, MESC statistics are further disaggregated to individual sectors for each county. Statistics are reported for the four largest tourism-related sectors: gasoline service stations, eating and drinking places, hotels, motels, and tourist courts, and miscellaneous amusement and recreation services. The annual average number of jobs by county in each of these sectors for 1985 through 1988 is reported in Tables 23-18 through 23-21. Monthly statistics by county and sector for 1988 are reported in Tables 23-22 through 23-25. For some counties and sectors figures were not disclosed (designated by a D) due to a small number of firms.

Although the number of jobs in tourism-related sectors has changed over time at both the state and county levels, seasonal patterns within each county have remained quite stable. Consequently, monthly estimates for any recent year may be obtained by multiplying the 1988 seasonal factor for a given month and county by the average annual employment for the county.

Table 23-17. Michigan counties ranked by winter seasonality in tourism-related employment, 1987.

COUNTY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MAX-MIN	RANK
Gogebic	1.41	1.37	1.31	0.77	0.83	0.87	0.88	0.91	0.87	0.82	0.82	1.17	0.64	1
Charlevoix	1.02	1.03	1.01	0.67	0.91	1.14	1.33	1.35	1.06	0.85	0.70	0.94	0.68	2
Benzie	0.93	0.89	0.89	0.73	0.90	1.15	1.50	1.50	1.11	0.87	0.68	0.85	0.82	3
Emmet	0.91	0.89	0.86	0.81	0.95	1.11	1.36	1.33	1.12	1.05	0.83	0.79	0.57	4
Antrim	0.91	0.90	0.86	0.77	1.06	1.17	1.29	1.34	1.12	1.01	0.81	0.78	0.57	5
Oscoda	0.84	0.83	0.82	0.83	0.87	0.89	1.13	1.06	1.00	1.28	1.30	1.16	0.48	6
Presque Isle	0.84	0.84	0.84	0.90	1.01	1.08	1.25	1.22	1.17	0.98	0.95	0.92	0.41	7
Hillsdale	0.84	0.85	0.93	0.97	1.00	0.97	1.03	1.04	1.13	1.32	0.92	1.00	0.48	8
Roscommon	0.83	0.82	0.81	0.89	0.94	1.00	1.21	1.22	1.15	1.08	1.03	1.01	0.41	9
Kalkaska	0.81	0.79	0.81	0.83	0.91	1.05	1.24	1.19	1.21	1.14	1.02	0.97	0.45	10
Leelanau	0.81	0.77	0.73	0.60	0.71	1.16	1.65	1.71	1.31	1.01	0.81	0.71	1.11	11
Chippewa	0.80	0.77	0.80	0.90	1.00	1.06	1.27	1.30	1.21	1.11	0.93	0.86	0.53	12
Iosco	0.80	0.80	0.84	0.97	1.07	1.12	1.23	1.23	1.17	0.99	0.94	0.84	0.43	13
Alger	0.77	0.77	0.79	0.81	1.03	1.14	1.27	1.41	1.17	1.08	0.92	0.83	0.64	14
Huron	0.77	0.79	0.82	0.93	1.05	1.13	1.29	1.28	1.16	0.98	0.91	0.87	0.52	15
Manistee	0.76	0.76	0.79	0.85	1.04	1.12	1.24	1.33	1.21	1.07	0.95	0.89	0.57	16
Schoolcraft	0.76	0.62	0.72	0.91	1.06	1.21	1.28	1.33	1.28	1.16	0.91	0.75	0.71	17
Alcona	0.76	0.80	0.77	0.89	1.00	1.11	1.23	1.24	1.09	1.09	1.07	0.96	0.48	18
Allegan	0.75	0.74	0.80	0.98	1.18	1.24	1.27	1.23	1.16	0.99	0.85	0.83	0.53	19
Sanilac	0.75	0.78	0.85	1.06	1.17	1.18	1.15	1.17	1.08	0.97	0.94	0.89	0.43	20
Alpena	0.73	0.71	0.72	0.77	0.83	1.18	1.20	1.21	1.17	1.16	1.15	1.17	0.50	21
Luce	0.73	0.72	0.70	0.81	0.97	1.14	1.41	1.46	1.23	1.08	0.93	0.83	0.76	22
Missaukee	0.71	0.70	0.73	0.95	1.11	1.14	1.37	1.34	1.25	0.99	0.90	0.81	0.67	23
Mason	0.70	0.66	0.68	0.91	1.04	1.10	1.31	1.35	1.30	1.10	0.96	0.89	0.69	24
Montmorency	0.68	0.69	0.68	0.83	1.09	1.24	1.24	1.24	1.21	1.05	1.07	0.97	0.56	25
Lake	0.66	0.67	0.69	1.00	1.06	1.17	1.19	1.22	1.24	1.13	1.09	0.88	0.58	26
Cheboygan	0.58	0.59	0.61	0.66	1.08	1.28	1.64	1.62	1.47	1.13	0.71	0.63	1.06	27
Oceana	0.56	0.53	0.61	0.82	1.15	1.38	1.53	1.52	1.32	0.97	0.84	0.76	1.00	28
Mackinac	0.55	0.53	0.49	0.44	1.10	1.57	1.76	1.76	1.46	1.16	0.60	0.57	1.32	29
Keweenaw	0.53	0.50	0.47	0.52	0.75	1.50	2.05	2.10	1.86	0.86	0.44	0.45	1.66	30
Statewide	0.93	0.93	0.94	0.97	1.01	1.04	1.06	1.07	1.04	1.02	0.99	0.99	0.14	

NOTE: This table ranks counties with significant seasonal fluctuation by their January seasonal factor. Seasonal factor equals monthly employment divided by average annual employment.

SOURCE: Michigan Employment Security Commission.

Table 23-18. Number of jobs in Michigan's gasoline service station industry (SIC 554) by county, 1985-1988.

COUNTY	1985	1986	1987	1988
Alcona	38	41	42	40
Alger	29	30	31	30
Allegan	128	133	143	150
Alpena	86	98	122	124
Antrim	32	38	31	31
Arenac	202	248	320	380
Baraga	17	18	26	30
Barry	20	27	23	25
Bay	181	177	129	134
Benzie	14	12	11	12
Berrien	559	569	622	689
Branch	25	31	35	37
Calhoun	443	424	474	472
Cass	25	23	14	27
Charlevoix	16	19	28	39
Cheboygan	70	78	73	73
Chippewa	49	72	94	107
Clare	72	80	86	78
Clinton	46	48	51	74
Crawford	14	9	8	(D)
Delta	94	60	68	71
Dickinson	60	68	54	60
Eaton	76	93	103	114
Emmet	59	63	65	68
Genesee	1,066	1,135	1,292	1,630
Gladwin	27	19	23	23
Gogebic	185	203	71	75
Grand Traverse	320	375	421	467
Gratiot	164	69	152	153
Hillsdale	37	39	36	35
Houghton	35	30	59	76
Huron	102	113	125	132
Ingham	679	739	828	944
Ionia	116	125	118	129
Iosco	40	39	44	56
Iron	62	86	62	69
Isabella	109	109	113	133
Jackson	193	198	199	229
Kalamazoo	274	336	346	430
Kalkaska	(D)	(D)	(D)	16
Kent	966	1,196	1,294	1,459
Keweenaw	(D)	(D)	(D)	(D)
Lake	3	(D)	(D)	10
Lapeer	50	153	159	149
Leelanau	31	36	39	49
Lenawee	102	92	103	144
Livingston	207	208	202	217

Luce	31	31	41	41
Mackinac	39	44	53	54
Macomb	1,258	1,220	1,207	1,456
Manistee	40	36	42	44
Marquette	100	112	165	202
Mason	20	20	22	30
Mecosta	55	54	56	57
Menominee	45	45	53	58
Midland	92	88	81	78
Missaukee	12	(D)	11	16
Monroe	228	252	136	181
Montcalm	180	201	201	224
Montmorency	(D)	5	5	6
Muskegon	308	334	313	339
Newaygo	18	23	24	22
Oakland	3,788	3,493	3,504	2,704
Oceana	51	60	57	61
Ogemaw	35	34	33	31
Ontonagon	(D)	(D)	27	28
Osceloa	32	30	29	33
Oscoda	(D)	(D)	(D)	(D)
Otsego	40	(D)	46	50
Ottawa	385	401	412	502
Presque Isle	55	59	60	38
Roscommon	33	43	47	56
Saginaw	491	495	509	442
Saint Clair	102	76	90	120
Saint Joseph	200	203	72	99
Sanilac	39	35	35	39
Schoolcraft	27	30	44	51
Shiawassee	82	97	97	117
Tuscola	64	65	78	80
Van Buren	123	136	155	193
Washtenaw	775	612	601	602
Wayne	4,188	4,340	4,452	3,990
Wexford	83	77	84	84
Unallocated	1,665	1,663	2,218	2,479
Statewide	21,846	22,257	23,366	24,112

SOURCE: Michigan Employment Security Commission.

Table 23-19. Number of jobs in Michigan's eating and drinking places industry (SIC 581) by county, 1985-1988.

COUNTY	1985	1986	1987	1988
Alcona	125	134	161	190
Alger	104	119	122	143
Allegan	851	953	1,014	914
Alpena	634	552	853	1,153
Antrim	249	282	294	325
Arenac	326	388	413	398
Baraga	116	122	127	112
Barry	398	473	439	507
Bay	2,192	2,362	2,612	2,765
Benzie	222	226	230	221
Berrien	3,084	3,360	3,474	3,733
Branch	378	432	471	445
Calhoun	3,407	3,537	3,477	3,603
Cass	323	369	277	321
Charlevoix	261	314	373	422
Cheboygan	617	661	628	635
Chippewa	555	516	742	930
Clare	444	519	552	540
Clinton	457	448	509	619
Crawford	486	472	492	537
Delta	564	498	776	826
Dickinson	380	362	582	586
Eaton	828	921	1,074	1,100
Emmet	493	469	471	674
Genesee	10,147	10,505	11,532	10,964
Gladwin	337	353	337	335
Gogebic	209	239	347	570
Grand Traverse	2,431	2,633	2,759	2,788
Gratiot	468	537	637	778
Hillsdale	282	281	470	478
Houghton	578	617	850	781
Huron	529	484	551	592
Ingham	8,147	8,581	9,725	9,978
Ionia	539	593	585	708
Iosco	479	581	691	710
Iron	225	216	221	221
Isabella	1,166	1,196	1,366	1,504
Jackson	3,435	3,514	2,701	2,871
Kalamazoo	5,731	6,376	6,987	7,441
Kalkaska	138	127	145	168
Kent	14,306	14,520	15,162	15,681
Keweenaw	34	32	49	62
Lake	101	114	146	158
Lapeer	893	911	969	1,063
Leelanau	237	217	273	324
Lenawee	1,385	1,513	1,708	1,689
Livingston	1,517	1,498	1,646	1,814

Luce	85	77	99	98
Mackinac	398	416	500	555
Macomb	15,053	14,934	15,753	16,165
Manistee	286	295	404	408
Marquette	2,406	2,452	1,824	1,902
Mason	411	426	440	513
Mecosta	502	539	621	678
Menominee	546	510	541	569
Midland	1,022	1,037	1,129	1,175
Missaukee	83	91	88	94
Monroe	1,386	1,488	1,664	1,758
Montcalm	669	713	779	851
Montmorency	192	157	245	248
Muskegon	2,914	3,128	3,111	3,519
Newaygo	386	376	437	414
Oakland	38,863	39,131	40,589	42,394
Oceana	270	253	238	259
Ogemaw	216	234	283	347
Ontonagon	148	163	166	175
Osceloa	188	191	201	197
Oscoda	67	79	103	126
Otsego	412	429	489	544
Ottawa	3,315	3,184	3,313	3,473
Presque Isle	157	162	155	154
Roscommon	588	661	765	760
Saginaw	5,078	5,396	5,782	6,035
Saint Clair	2,065	2,238	2,278	2,415
Saint Joseph	925	780	987	1,139
Sanilac	308	268	342	320
Schoolcraft	202	121	144	178
Shiawassee	694	741	753	900
Tuscola	453	438	453	495
Van Buren	810	917	930	1,049
Washtenaw	7,140	8,410	9,256	9,573
Wayne	43,240	41,970	44,683	45,969
Wexford	470	539	666	769
Unallocated	7,967	9,121	7,978	8,287
Statewide	210,330	215,779	227,228	237,881

SOURCE: Michigan Employment Security Commission.

Table 23-20. Number of jobs in Michigan's hotel, motel, and tourist court industry (SIC 701) by county, 1985-1988.

COUNTY	1985	1986	1987	1988
Alcona	(D)	(D)	(D)	19
Alger	35	24	21	24
Allegan	99	81	87	111
Alpena	71	72	174	184
Antrim	352	390	401	428
Arenac	(D)	(D)	(D)	(D)
Baraga	13	12	18	16
Barry	(D)	(D)	(D)	(D)
Bay	36	242	299	298
Benzie	150	145	195	216
Berrien	424	390	313	397
Branch	26	25	36	24
Calhoun	190	287	451	497
Cass	(D)	(D)	(D)	(D)
Charlevoix	554	578	573	389
Cheboygan	160	194	179	207
Chippewa	78	118	164	193
Clare	56	55	48	57
Clinton	0	(D)	(D)	(D)
Crawford	129	132	136	148
Delta	195	238	198	199
Dickinson	155	127	102	115
Eaton	20	20	(D)	(D)
Emmet	344	358	241	529
Genesee	446	480	451	456
Gladwin	33	30	31	(D)
Gogebic	109	121	94	101
Grand Traverse	673	1,465	1,547	1,522
Gratiot	9	9	7	7
Hillsdale	(D)	(D)	(D)	7
Houghton	141	146	131	155
Huron	49	67	73	68
Ingham	728	1,180	1,371	1,355
Ionia	(D)	(D)	(D)	(D)
Iosco	51	53	131	152
Iron	15	12	14	14
Isabella	191	220	248	253
Jackson	255	233	253	257
Kalamazoo	1,202	627	785	733
Kalkaska	39	27	15	14
Kent	2,084	2,177	2,603	2,536
Keweenaw	41	47	52	39
Lake	(D)	(D)	(D)	(D)
Lapeer	(D)	24	28	33
Leelanau	161	173	213	168
Lenawee	40	21	28	30
Livingston	134	139	152	118

Luce	15	29	34	30
Mackinac	471	378	478	526
Macomb	701	711	739	1,008
Manistee	142	158	128	110
Marquette	349	329	332	292
Mason	106	118	129	158
Mecosta	(D)	(D)	(D)	(D)
Menominee	(D)	(D)	(D)	(D)
Midland	410	405	460	451
Missaukee	(D)	(D)	(D)	(D)
Monroe	164	188	171	175
Montcalm	30	31	7	41
Montmorency	23	26	27	23
Muskegon	183	184	242	231
Newaygo	(D)	(D)	9	18
Oakland	2,214	3,875	4,078	4,184
Oceana	28	14	27	33
Ogemaw	11	19	16	7
Ontonagon	6	14	41	38
Osceloa	0	(D)	(D)	(D)
Oscoda	8	11	11	8
Otsego	185	87	129	179
Ottawa	569	355	481	530
Presque Isle	11	19	22	26
Roscommon	95	88	86	87
Saginaw	713	793	882	882
Saint Clair	256	295	211	346
Saint Joseph	150	275	315	305
Sanilac	48	61	56	56
Schoolcraft	35	54	60	59
Shiawassee	50	(D)	(D)	39
Tuscola	12	11	19	15
Van Buren	60	64	78	72
Washtenaw	874	867	1,337	1,071
Wayne	5,799	5,771	5,850	5,849
Wexford	157	161	153	144
Unallocated	777	505	556	843
Statewide	24,292	26,799	29,242	30,101

SOURCE: Michigan Employment Security Commission.

Table 23-21. Number of jobs in Michigan's miscellaneous amusement and recreation services industry (SIC 799) by county, 1985-1988.

COUNTY	1985	1986	1987	1988
Alcona	(D)	(D)	(D)	61
Alger	(D)	(D)	(D)	9
Allegan	101	73	94	92
Alpena	31	30	30	49
Antrim	27	28	29	55
Arenac	21	15	23	22
Baraga	(D)	(D)	(D)	(D)
Barry	25	19	22	23
Bay	135	129	134	150
Benzie	29	21	37	39
Berrien	305	274	326	309
Branch	34	18	21	28
Calhoun	201	208	211	219
Cass	93	89	97	104
Charlevoix	18	22	23	19
Cheboygan	31	31	27	26
Chippewa	37	233	244	223
Clare	20	32	31	22
Clinton	33	25	29	37
Crawford	30	23	19	21
Delta	56	38	50	62
Dickinson	66	69	66	71
Eaton	45	61	63	60
Emmet	140	123	119	143
Genesee	553	548	599	781
Gladwin	(D)	(D)	(D)	(D)
Gogebic	281	247	247	294
Grand Traverse	152	142	154	169
Gratiot	48	62	51	45
Hillsdale	57	66	73	79
Houghton	166	127	136	13
Huron	31	41	46	63
Ingham	345	380	428	494
Ionia	49	57	62	58
Iosco	185	187	180	175
Iron	(D)	34	39	40
Isabella	55	50	74	91
Jackson	208	236	230	261
Kalamazoo	415	373	365	419
Kalkaska	(D)	(D)	(D)	(D)
Kent	1,004	1,106	1,094	1,398
Keweenaw	0	0	0	0
Lake	(D)	(D)	(D)	(D)
Lapeer	89	100	90	86
Leelanau	(D)	74	92	148
Lenawee	186	191	207	200
Livingston	336	303	325	346

Luce	(D)	(D)	(D)	(D)
Mackinac	44	33	158	182
Macomb	900	992	1,134	1,205
Manistee	29	28	30	36
Marquette	89	122	140	139
Mason	59	60	63	52
Mecosta	47	42	72	49
Menominee	61	(D)	(D)	53
Midland	124	142	145	149
Missaukee	(D)	(D)	(D)	(D)
Monroe	161	167	190	235
Montcalm	44	32	53	53
Montmorency	58	35	40	37
Muskegon	206	207	243	276
Newaygo	32	31	46	56
Oakland	2,880	3,081	3,163	4,566
Oceana	46	42	41	50
Ogemaw	24	23	37	24
Ontonagon	(D)	(D)	(D)	(D)
Osceloa	(D)	0	(D)	(D)
Oscoda	(D)	(D)	4	5
Otsego	89	110	127	148
Ottawa	208	174	200	299
Presque Isle	(D)	(D)	(D)	12
Roscommon	20	27	41	42
Saginaw	234	227	264	386
Saint Clair	206	171	155	211
Saint Joseph	79	66	77	81
Sanilac	48	43	41	58
Schoolcraft	(D)	(D)	(D)	(D)
Shiawassee	47	53	53	62
Tuscola	45	50	54	58
Van Buren	62	63	46	25
Washtenaw	442	468	458	464
Wayne	2,557	2,707	2,600	2,892
Wexford	105	134	123	126
Unallocated	63	63	85	145
Statewide	14,602	15,182	15,882	19,078

NOTE: Due to changes in the definition of SIC 799, figures pertaining to 1988 are not fully comparable to those pertaining to earlier years. See Table 23-1.

SOURCE: Michigan Employment Security Commission.

Table 23-22. Number of jobs in Michigan's gasoline service station industry (SIC 554) by county by month, 1988.

COUNTY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE
Alcona	34	34	33	39	43	43	41	42	41	42	44	39	40
Alger	28	24	27	26	29	29	34	31	29	36	33	33	30
Allegan	153	161	158	153	153	162	151	162	166	126	124	126	150
Alpena	122	123	119	122	123	126	132	126	130	127	123	116	124
Antrim	30	30	30	31	31	33	32	34	31	32	31	32	31
Arenac	339	341	348	357	368	381	392	407	397	392	426	417	380
Baraga	28	28	27	28	31	31	31	31	32	32	32	31	30
Barry	24	25	22	25	27	25	24	24	25	24	26	24	25
Bay	124	132	134	134	136	137	138	143	146	125	128	132	134
Benzie	7	8	7	13	15	12	14	14	15	11	12	12	12
Berrien	642	637	652	708	729	732	757	750	724	650	651	637	689
Branch	41	44	41	39	40	42	39	37	35	26	27	27	37
Calhoun	476	480	489	474	487	474	463	452	480	457	461	467	472
Cass	26	27	26	28	27	30	33	33	29	22	21	24	27
Charlevoix	38	36	35	35	38	39	42	46	40	40	37	38	39
Cheboygan	59	65	67	66	70	79	85	89	80	78	71	72	73
Chippewa	92	94	90	98	108	112	116	117	115	111	114	113	107
Clare	71	68	70	75	79	71	86	88	91	79	77	78	78
Clinton	69	70	71	73	68	69	79	81	88	71	73	78	74
Crawford	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Delta	76	76	69	71	78	76	64	65	63	69	76	71	71
Dickinson	63	67	65	63	59	55	62	59	55	56	62	59	60
Eaton	107	116	120	117	116	117	117	117	116	112	103	109	114
Emmet	58	60	59	62	61	74	80	81	76	67	65	70	68
Genesee	1,447	1,489	1,508	1,532	1,578	1,661	1,707	1,744	1,712	1,676	1,725	1,785	1,630
Gladwin	23	23	23	24	27	25	28	26	27	22	15	13	23
Gogebic	69	69	71	69	72	78	76	75	75	79	81	81	75
Grand Traverse	426	425	435	454	450	467	484	489	490	496	492	493	467
Gratiot	146	144	149	163	169	159	162	158	156	141	144	145	153
Hillsdale	38	33	36	34	30	31	34	38	34	37	39	38	35
Houghton	70	71	70	69	69	71	75	75	74	86	89	89	76
Huron	118	123	120	123	134	136	143	139	123	140	142	141	132
Ingham	944	979	1,010	929	943	944	933	923	933	924	928	942	944
Ionia	127	123	127	135	137	132	131	139	135	118	119	120	129
Iosco	57	61	66	63	58	57	52	53	53	49	50	51	56
Iron	66	66	65	63	67	72	72	75	69	68	72	73	69
Isabella	128	129	127	123	126	132	132	132	134	136	143	149	133
Jackson	227	225	228	225	219	219	227	221	222	246	238	249	229
Kalamazoo	425	426	435	430	418	430	416	434	428	442	442	434	430
Kalkaska	22	23	20	20	21	20	14	15	10	7	9	11	16
Kent	1,497	1,470	1,488	1,407	1,434	1,409	1,515	1,501	1,493	1,404	1,432	1,455	1,459
Keweenaw	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Lake	5	6	6	7	14	14	20	19	14	7	4	2	10
Lapeer	152	157	152	153	140	149	143	149	148	147	145	147	149
Leelanau	44	46	45	49	45	48	59	58	56	49	43	44	49
Lenawee	135	141	140	142	147	152	152	154	154	139	136	138	144

Livingston	198	204	199	218	220	221	229	230	230	215	216	219	217
Luce	37	34	37	41	46	43	41	44	43	42	41	39	41
Mackinac	43	44	44	46	56	59	66	65	65	57	55	50	54
Macomb	1,428	1,449	1,451	1,421	1,411	1,421	1,463	1,434	1,465	1,502	1,501	1,522	1,456
Manistee	38	41	40	41	44	44	49	52	49	48	44	41	44
Marquette	198	201	197	197	205	201	196	199	195	213	209	211	202
Mason	30	27	25	29	29	30	32	32	35	31	29	28	30
Mecosta	64	63	59	52	53	58	54	54	62	54	56	54	57
Menominee	57	57	58	56	58	57	57	56	57	60	62	66	58
Midland	71	74	79	79	83	83	83	80	81	74	75	71	78
Missaukee	13	14	14	13	15	18	18	18	19	15	15	16	16
Monroe	174	177	177	191	191	202	185	186	189	164	168	163	181
Montcalm	189	186	195	217	228	236	233	231	234	246	243	246	224
Montmorency	5	4	3	3	4	7	6	7	7	7	6	7	6
Muskegon	317	325	318	332	345	341	364	345	353	344	346	343	339
Newaygo	20	24	20	21	22	24	22	21	33	21	19	17	22
Oakland	2,706	2,683	2,749	2,726	2,673	2,680	2,775	2,712	2,724	2,664	2,657	2,700	2,704
Oceana	51	49	50	58	76	82	74	75	58	63	57	44	61
Ogemaw	30	30	30	31	32	32	34	33	31	32	31	31	31
Ontonagon	29	27	28	29	27	27	26	26	28	28	28	29	28
Osceloa	30	29	31	32	26	34	34	33	33	37	37	39	33
Oscoda	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Otsego	48	47	44	49	55	52	53	51	51	52	48	46	50
Ottawa	455	458	469	523	529	528	499	495	490	517	526	531	502
Presque Isle	65	64	65	43	45	45	21	21	24	19	20	20	38
Roscommon	42	44	43	49	53	56	62	58	67	64	65	64	56
Saginaw	435	435	428	434	428	424	455	460	444	456	456	453	442
Saint Clair	100	99	103	118	126	132	137	131	128	116	119	127	120
Saint Joseph	94	99	99	105	103	101	103	100	96	98	98	95	99
Sanilac	32	32	30	39	44	44	46	44	42	42	38	38	39
Schoolcraft	43	42	44	44	53	50	63	57	60	51	52	48	51
Shiawassee	99	95	90	118	128	137	124	122	124	118	123	120	117
Tuscola	76	73	72	71	74	81	81	90	89	80	86	85	80
Van Buren	176	178	177	195	197	199	200	201	196	193	196	204	193
Washtenaw	629	650	665	653	633	643	569	555	561	549	547	565	602
Wayne	4,171	4,145	4,105	4,010	3,962	3,999	3,934	3,944	3,914	3,868	3,892	3,941	3,990
Wexford	78	78	78	85	81	88	84	85	87	87	90	90	84
Unallocated	2,174	2,193	2,176	2,163	2,175	2,178	2,401	2,454	3,030	2,866	2,989	2,953	2,479
Statewide	23,341	23,472	23,596	23,604	23,766	24,035	24,484	24,471	24,962	24,311	24,566	24,741	24,112

SOURCE: Michigan Employment Security Commission.

Table 23-23. Number of jobs in Michigan's eating and drinking places industry (SIC 581) by county by month, 1988.

COUNTY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE
Alcona	119	130	132	169	191	225	237	255	241	208	205	170	190
Alger	110	117	113	99	110	145	202	201	170	156	151	146	143
Allegan	781	791	826	937	1,010	1,021	1,067	1,060	953	894	814	819	914
Alpena	1,050	1,049	1,074	1,113	1,174	1,220	1,229	1,248	1,231	1,175	1,150	1,124	1,153
Antrim	251	260	242	266	356	412	421	408	361	327	296	305	325
Arenac	395	387	392	436	468	484	412	403	390	348	345	320	398
Baraga	96	99	100	105	114	119	132	127	128	114	107	97	112
Barry	461	468	460	495	509	512	525	564	561	513	491	519	507
Bay	2,510	2,570	2,572	2,733	2,815	2,832	2,883	2,918	2,808	2,874	2,855	2,810	2,765
Benzie	155	151	170	188	206	234	349	353	310	186	175	177	221
Berrien	3,280	3,246	3,570	3,767	3,905	3,948	4,082	4,133	4,121	3,699	3,549	3,501	3,733
Branch	428	434	479	484	517	435	464	468	441	411	396	378	445
Calhoun	3,449	3,431	3,502	3,687	3,760	3,776	3,731	3,714	3,685	3,522	3,475	3,502	3,603
Cass	247	263	290	333	337	354	361	349	326	343	332	321	321
Charlevoix	328	330	332	374	439	612	624	589	478	345	310	307	422
Cheboygan	322	347	362	355	631	803	1,053	1,053	1,002	729	520	437	635
Chippewa	796	833	893	847	911	1,001	1,080	1,092	1,034	981	869	821	930
Clare	472	483	470	537	583	592	595	597	581	539	523	509	540
Clinton	631	618	632	650	668	664	647	630	602	547	556	579	619
Crawford	470	466	464	497	547	603	575	568	547	594	554	555	537
Delta	713	707	739	803	833	886	896	904	854	878	858	839	826
Dickinson	579	571	566	557	577	606	626	636	595	589	564	562	586
Eaton	1,064	1,076	1,060	1,085	1,153	1,191	1,153	1,167	1,147	1,054	1,032	1,023	1,100
Emmet	455	415	406	566	684	819	936	943	763	748	676	681	674
Genesee	10,514	10,362	10,443	10,675	10,905	11,172	11,203	11,246	11,338	11,338	11,195	11,180	10,964
Gladwin	327	312	319	334	364	374	355	344	343	323	317	311	335
Gogebic	515	512	525	533	545	574	573	586	571	631	637	634	570
Grand Traverse	2,421	2,443	2,402	2,510	2,770	2,899	3,367	3,350	3,103	2,835	2,718	2,642	2,788
Gratiot	721	699	740	801	801	870	774	780	758	814	787	794	778
Hillsdale	472	495	500	455	487	474	517	509	500	455	441	427	478
Houghton	719	710	701	745	781	757	823	811	843	805	848	827	781
Huron	524	522	511	582	638	682	666	695	631	579	548	526	592
Ingham	9,544	9,624	9,822	10,145	10,474	10,396	9,736	9,691	9,842	10,264	10,164	10,033	9,978
Ionia	609	614	606	705	722	741	845	833	752	704	689	679	708
Iosco	594	581	602	639	700	787	835	840	805	762	718	654	710
Iron	193	192	198	220	235	254	279	278	248	181	186	188	221
Isabella	1,347	1,457	1,441	1,526	1,500	1,446	1,500	1,512	1,661	1,572	1,544	1,541	1,504
Jackson	2,662	2,673	2,740	2,942	3,053	3,025	2,950	2,996	2,941	2,877	2,793	2,805	2,871
Kalamazoo	7,201	7,180	7,122	7,284	7,425	7,365	7,221	7,413	7,544	7,944	7,822	7,776	7,441
Kalkaska	154	145	134	150	159	173	192	187	186	188	178	165	168
Kent	14,900	15,102	15,215	15,525	16,031	15,991	15,522	15,899	16,147	15,926	15,820	16,088	15,681
Keweenaw	29	29	28	34	35	71	105	109	108	73	64	64	62
Lake	133	129	133	154	164	172	181	182	172	161	169	142	158
Lapeer	948	921	970	1,010	1,029	1,055	1,079	1,087	1,123	1,185	1,169	1,177	1,063
Leelanau	222	196	191	232	304	461	545	543	466	318	204	208	324
Lenawee	1,620	1,631	1,650	1,688	1,731	1,760	1,732	1,780	1,767	1,670	1,625	1,611	1,689

Livingston	1,660	1,664	1,654	1,748	1,814	1,828	1,854	1,889	1,819	1,935	1,926	1,973	1,814
Luce	91	90	87	84	98	104	124	128	109	93	89	79	98
Mackinac	218	210	207	313	493	748	992	986	880	690	480	438	555
Macomb	15,686	15,720	15,954	16,026	16,568	16,594	16,425	16,788	16,664	15,959	15,731	15,866	16,165
Manistee	353	349	350	361	420	443	488	483	456	431	391	376	408
Marquette	1,865	1,796	1,776	1,828	1,892	1,900	1,952	1,968	1,996	1,969	1,948	1,937	1,902
Mason	371	406	411	513	549	572	646	667	605	514	451	446	513
Mecosta	630	636	637	680	721	703	666	676	677	718	715	680	678
Menominee	537	530	546	546	570	592	597	608	570	570	578	580	569
Midland	1,078	1,107	1,074	1,112	1,175	1,201	1,237	1,235	1,212	1,221	1,247	1,201	1,175
Missaukee	64	62	56	89	99	113	126	122	121	100	90	91	94
Monroe	1,539	1,521	1,618	1,785	1,836	1,848	1,756	1,848	1,903	1,843	1,796	1,802	1,758
Montcalm	768	781	864	873	877	876	882	874	889	858	846	822	851
Montmorency	195	206	188	207	261	297	306	300	272	253	254	236	248
Muskegon	3,201	3,206	3,261	3,438	3,484	3,628	3,719	3,729	3,680	3,660	3,622	3,604	3,519
Newaygo	353	364	367	464	478	483	400	411	454	418	398	374	414
Oakland	39,674	39,660	40,224	41,195	42,629	42,793	43,640	44,135	43,637	43,477	43,618	44,043	42,394
Oceana	197	194	208	228	294	298	335	335	299	245	239	230	259
Ogemaw	335	322	324	339	359	396	351	357	344	354	334	353	347
Ontonagon	169	165	158	161	172	188	195	207	190	172	166	162	175
Osceloa	186	186	192	212	224	231	190	186	187	185	197	189	197
Oscoda	108	109	108	111	130	133	159	155	145	127	124	107	126
Otsego	519	505	520	500	534	613	645	630	584	520	509	449	544
Ottawa	3,120	3,119	3,123	3,406	3,545	3,645	3,648	3,714	3,859	3,586	3,432	3,475	3,473
Presque Isle	128	128	127	151	163	177	200	197	195	137	127	123	154
Roscommon	721	720	702	729	780	830	856	849	802	727	719	690	760
Saginaw	5,640	5,598	5,648	5,952	6,153	6,207	6,338	6,397	6,218	6,049	6,107	6,107	6,035
Saint Clair	2,238	2,230	2,298	2,375	2,432	2,495	2,550	2,543	2,557	2,452	2,385	2,422	2,415
Saint Joseph	927	992	1,019	1,110	1,161	1,333	1,255	1,234	1,212	1,169	1,131	1,120	1,139
Sanilac	280	287	293	314	316	320	323	327	330	355	351	340	320
Schoolcraft	134	124	135	155	206	238	233	239	217	201	144	112	178
Shiawassee	794	791	806	836	970	940	912	935	967	951	938	965	900
Tuscola	440	498	466	500	506	518	513	515	517	498	494	473	495
Van Buren	897	907	937	1,021	1,160	1,241	1,249	1,190	1,122	1,023	942	897	1,049
Washtenaw	8,925	9,011	9,208	9,903	9,804	9,726	9,299	9,296	9,516	10,122	10,108	9,962	9,573
Wayne	43,957	43,812	44,249	45,595	46,684	46,768	47,156	47,238	47,707	46,173	46,093	46,195	45,969
Wexford	660	615	648	759	771	798	900	891	865	798	769	754	769
Unallocated	7,761	7,863	8,131	8,554	8,693	8,672	8,196	8,503	8,260	8,088	8,243	8,475	8,287
Statewide	221,950	222,255	225,413	234,145	242,372	245,483	246,593	248,836	247,215	242,020	239,171	239,122	237,881

SOURCE: Michigan Employment Security Commission.

Table 23-24. Number of jobs in Michigan's hotel, motel, and tourist court industry (SIC 701) by county by month, 1988.

COUNTY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE
Alcona	19	22	2	2	9	32	34	32	18	30	10	20	19
Alger	4	3	4	11	31	38	39	39	35	40	22	22	24
Allegan	53	49	52	108	136	153	152	156	145	129	101	101	111
Alpena	173	176	181	164	170	200	207	212	189	187	177	175	184
Antrim	542	520	384	246	361	466	512	522	442	402	329	410	428
Arenac	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Baraga	9	10	10	19	20	20	17	17	21	19	15	12	16
Barry	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Bay	287	271	265	276	295	316	321	322	329	320	294	277	298
Benzie	265	261	250	147	188	210	232	231	225	196	136	252	216
Berrien	256	257	289	357	382	405	430	442	445	509	476	510	397
Branch	23	24	24	27	24	29	22	25	23	24	26	20	24
Calhoun	508	511	510	453	456	480	547	551	552	495	456	447	497
Cass	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Charlevoix	469	486	463	310	301	356	427	441	361	321	293	436	389
Cheboygan	71	76	73	127	244	314	398	379	323	251	126	99	207
Chippewa	129	132	128	176	210	233	248	252	245	224	157	187	193
Clare	72	65	50	52	55	57	59	57	60	55	53	51	57
Clinton	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Crawford	128	132	141	143	154	164	165	169	163	150	135	130	148
Delta	169	163	167	177	192	200	235	237	233	219	198	197	199
Dickinson	113	108	114	99	100	112	120	128	120	118	110	133	115
Eaton	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Emmet	628	658	602	414	439	486	667	635	533	453	326	505	529
Genesee	468	473	490	513	534	559	439	447	425	385	374	360	456
Gladwin	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Gogebic	99	101	105	86	95	116	97	97	97	98	95	125	101
Grand Traverse	1,321	1,357	1,351	1,403	1,595	1,713	1,869	1,900	1,651	1,533	1,287	1,286	1,522
Gratiot	4	6	7	8	7	7	8	8	8	9	8	6	7
Hillsdale	4	5	5	4	7	9	9	9	6	7	8	8	7
Houghton	139	136	144	143	158	163	176	178	178	158	145	143	155
Huron	43	44	42	61	74	79	102	109	94	70	59	39	68
Ingham	1,319	1,300	1,315	1,338	1,284	1,297	1,179	1,180	1,211	1,616	1,624	1,602	1,355
Ionia	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Iosco	208	130	127	131	133	151	177	163	150	153	151	149	152
Iron	13	12	12	7	11	13	15	16	14	20	17	18	14
Isabella	239	240	245	264	258	256	243	244	248	272	265	260	253
Jackson	239	208	196	158	216	290	326	337	306	292	234	282	257
Kalamazoo	523	541	527	671	691	706	825	820	841	872	911	870	733
Kalkaska	18	20	18	10	13	15	13	14	12	12	11	13	14
Kent	2,317	2,303	2,330	2,593	2,692	2,704	2,685	2,593	2,655	2,566	2,499	2,498	2,536
Keweenaw	7	7	8	7	29	83	106	111	60	30	8	6	39
Lake	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Lapeer	33	10	10	36	41	44	39	39	41	35	35	35	33
Leelanau	198	188	111	73	89	174	264	293	189	144	91	197	168
Lenawee	27	28	27	30	32	33	31	28	28	37	31	27	30

Livingston	101	101	103	107	105	126	143	148	131	126	115	112	118
Luce	14	5	6	14	32	46	50	49	43	44	31	24	30
Mackinac	70	60	65	138	710	1,060	1,149	1,134	880	722	201	127	526
Macomb	871	849	887	843	924	963	1,084	1,083	1,085	1,143	1,190	1,171	1,008
Manistee	79	87	92	93	106	131	150	154	131	109	101	85	110
Marquette	252	261	260	262	288	308	321	336	323	304	290	295	292
Mason	100	105	104	118	136	159	206	210	167	218	188	181	158
Mecosta	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Menominee	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Midland	418	433	429	425	439	438	471	511	466	449	458	473	451
Missaukee	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Monroe	168	164	164	166	164	167	188	187	180	182	181	187	175
Montcalm	9	10	11	44	45	42	55	58	65	52	51	51	41
Montmorency	17	17	17	18	22	27	27	27	26	26	27	22	23
Muskegon	78	78	80	247	261	273	348	338	318	265	250	231	231
Newaygo	11	13	12	16	16	18	24	23	24	20	18	17	18
Oakland	4,424	4,420	4,014	3,936	3,990	3,808	4,224	4,212	4,208	4,136	4,246	4,588	4,184
Oceana	8	8	8	27	41	69	83	81	39	19	8	6	33
Ogemaw	18	15	15	2	5	5	5	5	4	5	5	5	7
Ontonagon	36	37	35	37	36	40	40	39	42	38	40	37	38
Osceloa	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Oscoda	8	8	8	9	6	4	12	12	12	5	5	6	8
Otsego	150	156	161	145	169	178	209	217	219	194	187	161	179
Ottawa	454	442	456	505	562	582	565	608	595	555	536	501	530
Presque Isle	21	24	23	24	25	30	28	31	30	28	26	23	26
Roscommon	66	63	68	93	97	108	109	107	99	77	75	76	87
Saginaw	813	807	826	850	878	921	923	942	963	894	898	868	882
Saint Clair	110	110	109	408	410	439	435	438	432	424	418	416	346
Saint Joseph	279	276	276	301	303	311	350	348	344	296	292	289	305
Sanilac	52	53	52	52	54	52	59	61	59	58	57	57	56
Schoolcraft	38	40	40	39	53	67	81	85	74	77	62	54	59
Shiawassee	42	38	35	37	39	38	36	39	44	37	42	44	39
Tuscola	16	16	16	9	21	21	26	19	17	5	4	4	15
Van Buren	55	50	57	50	73	83	124	120	118	56	44	39	72
Washtenaw	944	982	1,022	1,081	1,153	1,145	1,171	1,177	1,104	1,037	1,025	1,012	1,071
Wayne	5,632	5,645	6,042	5,433	5,626	5,749	6,020	5,885	5,957	6,140	6,058	5,995	5,849
Wexford	156	146	134	122	127	160	170	165	141	134	135	135	144
Unallocated	741	743	738	738	816	842	857	858	890	973	967	951	843
Statewide	27,577	27,491	27,334	27,441	29,655	31,297	33,385	33,346	32,113	31,498	29,724	30,346	30,101

SOURCE: Michigan Employment Security Commission.

Table 23-25. Number of jobs in Michigan's miscellaneous amusement and recreation services industry (SIC 799) by county by month, 1988.

COUNTY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE
Alcona	48	44	31	58	66	71	81	75	74	67	62	53	61
Alger	2	2	2	10	13	13	17	17	15	6	4	4	9
Allegan	38	37	39	87	121	151	136	138	120	109	66	59	92
Alpena	21	23	25	31	59	66	64	118	61	48	31	35	49
Antrim	5	5	7	40	72	94	112	110	87	66	44	18	55
Arenac	1	0	1	10	25	34	61	62	52	10	8	3	22
Baraga	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Barry	4	4	6	26	44	45	40	40	34	25	9	3	23
Bay	48	83	81	145	206	234	238	225	196	148	97	95	150
Benzie	7	7	7	19	45	83	102	97	46	28	11	10	39
Berrien	242	220	227	283	341	395	406	397	330	299	265	303	309
Branch	23	23	29	37	38	38	27	28	29	26	20	19	28
Calhoun	126	131	144	216	271	289	292	320	265	198	191	184	219
Cass	184	181	108	59	65	78	88	86	77	83	85	152	104
Charlevoix	7	6	6	13	20	36	36	41	25	15	11	10	19
Cheboygan	7	8	9	20	42	39	50	52	42	28	7	7	26
Chippewa	189	225	216	219	225	278	271	281	237	204	159	166	223
Clare	28	28	28	4	17	21	30	31	29	25	9	8	22
Clinton	10	14	13	48	52	55	56	57	40	46	25	25	37
Crawford	21	22	15	11	20	26	29	29	28	18	8	20	21
Delta	43	44	45	56	88	92	85	87	83	67	33	23	62
Dickinson	69	67	66	61	67	87	89	94	76	61	56	57	71
Eaton	17	13	17	61	89	94	110	100	91	71	34	27	60
Emmet	81	77	70	107	174	219	235	237	183	145	105	79	143
Genesee	600	585	606	783	909	1,016	954	935	845	781	706	656	781
Gladwin	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Gogebic	606	569	536	205	81	116	164	165	170	154	234	523	294
Grand Traverse	79	72	80	100	170	246	292	276	258	170	144	137	169
Gratiot	34	34	38	36	46	51	67	64	64	39	33	30	45
Hillsdale	34	41	47	67	66	68	68	65	149	247	49	49	79
Houghton	1	2	2	11	18	24	23	24	23	18	3	2	13
Huron	18	16	21	68	79	92	104	106	88	59	54	49	63
Ingham	349	359	393	473	574	634	646	625	556	492	427	395	494
Ionia	30	31	29	50	66	74	97	90	93	58	44	35	58
Iosco	137	143	141	163	188	206	220	226	211	165	151	147	175
Iron	72	57	56	55	32	25	29	28	31	32	28	33	40
Isabella	57	55	61	82	111	114	122	126	114	83	80	81	91
Jackson	174	170	197	263	315	367	346	337	302	251	201	208	261
Kalamazoo	225	251	285	399	476	522	665	574	497	425	361	344	419
Kalkaska	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Kent	1,076	1,045	1,126	1,379	1,649	1,778	1,687	1,651	1,565	1,401	1,217	1,200	1,398
Keweenaw	0	0	0	0	0	0	0	0	0	0	0	0	0
Lake	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Lapeer	65	62	60	88	100	97	102	104	100	92	80	79	86
Leelanau	190	184	168	84	113	157	151	163	137	120	114	198	148
Lenawee	89	120	139	190	284	299	292	290	224	164	145	158	200

Livingston	524	440	213	289	326	309	345	326	302	277	284	512	346
Luce	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Mackinac	271	252	237	92	122	144	198	192	179	130	112	254	182
Macomb	851	835	906	1,315	1,496	1,542	1,489	1,469	1,409	1,176	1,012	955	1,205
Manistee	16	16	16	31	50	55	59	59	49	41	19	23	36
Marquette	156	148	135	94	128	139	168	178	162	118	123	118	139
Mason	18	18	18	63	68	64	82	123	81	48	24	19	52
Mecosta	36	36	36	55	69	82	47	49	53	46	40	37	49
Menominee	32	35	35	39	47	53	87	84	81	63	42	42	53
Midland	148	133	137	148	165	174	157	157	154	145	136	135	149
Missaukee	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Monroe	92	91	130	210	264	325	339	400	301	252	212	201	235
Montcalm	33	33	37	60	69	72	52	60	53	64	53	49	53
Montmorency	32	32	20	28	40	46	46	46	43	46	36	31	37
Muskegon	135	115	132	214	307	464	478	465	414	266	186	140	276
Newaygo	35	33	35	57	73	75	71	73	66	61	45	42	56
Oakland	3,679	3,567	3,996	4,264	4,814	5,228	5,293	5,327	4,925	4,895	4,457	4,345	4,566
Oceana	10	9	11	21	81	100	114	112	78	37	21	10	50
Ogemaw	17	16	19	25	26	25	26	27	25	27	23	29	24
Ontonagon	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Osceloa	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Oscoda	3	3	3	2	4	4	4	4	4	8	8	8	5
Otsego	173	159	146	113	145	164	170	163	161	145	105	132	148
Ottawa	221	206	254	289	323	364	363	369	348	317	266	264	299
Presque Isle	3	3	3	5	19	25	20	19	17	15	11	6	12
Roscommon	13	12	15	30	53	76	85	76	66	37	21	18	42
Saginaw	302	305	316	356	440	497	456	445	585	366	291	267	386
Saint Clair	88	123	119	158	285	307	311	319	281	224	170	149	211
Saint Joseph	33	28	31	68	86	95	105	104	259	83	46	36	81
Sanilac	42	41	43	67	71	74	74	74	70	55	49	34	58
Schoolcraft	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Shiawassee	14	13	20	64	78	83	107	105	98	69	49	43	62
Tuscola	21	23	31	60	73	83	94	93	81	62	37	32	58
Van Buren	21	21	24	15	26	26	46	44	30	17	13	13	25
Washtenaw	317	328	338	378	473	581	603	653	612	455	429	396	464
Wayne	2,056	2,057	2,287	2,785	3,231	3,616	3,597	3,629	3,283	2,838	2,654	2,675	2,892
Wexford	250	197	155	79	88	133	130	142	105	85	61	81	126
Unallocated	150	113	114	135	175	185	167	169	153	141	122	119	145
Statewide	14,714	14,364	15,030	17,632	21,073	23,549	24,014	24,063	22,115	19,081	16,487	16,811	19,078

NOTE: Due to changes in the definition of SIC 799, these statistics are not fully comparable to those pertaining to earlier years. See Table 23-1.

SOURCE: Michigan Employment Security Commission.

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CHAPTER 24

SALES AND USE TAX COLLECTIONS BY MICHIGAN COUNTY FOR SELECTED BUSINESS CATEGORIES

Daniel M. Spotts

Introduction

This chapter presents county-level statistics on the sales and use tax collections of selected types of businesses in Michigan. When intelligently used with a full recognition of their limitations, these figures can be useful in documenting trends in the volume of economic activity within a given county. The Michigan Department of Treasury generously provided these statistics to us in response to a special request. The information is not available in any other publication.

The statistics presented in this chapter pertain to selected types of businesses patronized by travelers in Michigan, including clothing stores. Statistics on the latter are included since shopping is an important pursuit of many tourists. The specific business categories for which statistics are presented are defined in Table 24-1. Local residents, as well as travelers, of course patronize virtually all of the types of businesses listed in this table, although their use of hotels, motels, and tourist courts is negligible. Consequently, with the exception of hotels, motels, and tourist courts, the statistics for a given business category cannot be considered an index of traveler expenditures. However, seasonal variations in these statistics can be largely attributed to influxes of tourist spending.

Quarterly and annual statistics for 1985 through 1989 are presented in Tables 24-2 through 24-26. Annual statistics on the use tax collections of hotels, motels, and tourist courts for 1983 through 1989 are presented in Table 24-27. Quarterly and annual statistics on all business categories listed in Table 24-1 for 1983 and 1984 are available in the first edition of this book.

The statistics presented in this chapter, more than any other statistics in this book, are subject to abuse by individuals failing to familiarize themselves with their nature and limitations. On this account the following information is provided to help users understand these statistics and their limitations.

Sales and Use Tax Defined

The sales tax is a flat 4% tax on receipts for persons selling at retail in Michigan (Michigan Department of Treasury, 1985:6). The tax is levied on gross proceeds from sales at retail of tangible personal property. "Tangible personal property" means goods that can be possessed and exchanged, with the exception of real property. All prepared food and drink items (including alcoholic beverages) sold by eating and drinking places are subject to the sales tax (Michigan Department of Treasury, 1979:50).

The use tax is a 4% tax levied on interstate sales of tangible personal property, on the sale of leased wire communication services, and on the sale of transient hotel or motel room rentals. Only the latter type of sales are relevant here. The room use tax is levied on the rental of "rooms or lodging furnished by hotelkeepers, motel operators and other persons furnishing accommodations that are available to the public, on the basis of a commercial or

Table 24-1. Definitions of selected Business Classification Codes employed by the Michigan Department of Treasury.

Business Classification Code	Types of Businesses Included in Code
557	Watercraft Sales and Service
561	Mens and Boys Clothing
562	Womens Clothing, Bridal, Lingerie, Etc.
581	Class C Tavern, With Liquor, Food Incidental
582	Tavern, Beer and Wine only, Food Incidental
583	Night Clubs, Cabarets, Discotheques
584	Hotel Dining Rooms
585	Family Restaurants and Cafeterias
586	Lunch Counters, Dairy Bars, Fast Food Restaurants
595	Sporting Goods Stores, Bicycles, Small Arms, Ammunition, Tack Supplies, Etc.
701	Hotels, Tourist Courts, Motels

SOURCE: Michigan Department of Treasury. 1984. "Business Classification Codes." C-3401.

business enterprise, irrespective of whether or not membership is required for use of the accommodations, except rooms and lodging rented for a continuous period of more than one month" (Michigan Department of Treasury, 1984:17). The types of establishments that must pay the room use tax include inns, motels, tourist houses, nudist camps, apartment hotels, resort lodges and cabins, and certain camps operated by other than nonprofit organizations. Hospitals and nursing homes are not included (Michigan Department of Treasury, 1984:17).

The statistics presented do not include interest or penalty revenue. Statistics for a given quarter represent the amount of sales and use tax liability incurred during that quarter rather than the amount of sales and use tax revenue received by the Department of Treasury during that quarter. The State of Michigan's room use tax is independent of other room use taxes levied by counties, assessment districts, and/or visitor and convention bureaus. That is, the Michigan room use tax is 4% of the price of a room, not 4% of the price of a room plus the cost of other assessments and/or use taxes.

Many lodging establishments in Michigan pay both sales tax and use tax. They may, for example, pay sales tax on the sale of gifts and restaurant meals, and use tax on the rental of rooms. Since not all lodging establishments pay sales tax, however, use tax collections are a more comprehensive indicator of travel activity in a given county.

The quarterly and annual statistics presented in the tables are aggregations of monthly statistics that were provided to us by the Michigan Department of Treasury. The original monthly statistics are not presented because some such statistics are limited by the fact that some firms pay sales and/or use tax quarterly or annually rather than monthly. Consequently, the tax payments of such firms are included only in the third month of each quarter (i.e., March, June, September, and December), even though these firms may have transacted business during each month of a given quarter.

In some counties, all or nearly all firms in a given business category may pay sales and/or use tax on a monthly basis. In such cases it may be possible to utilize these statistics to estimate the magnitude of tourist expenditures in a given county. The procedure involves: (1) dividing tax collections by 4% to determine the dollar volume of business in a given business category, (2) subtracting the portion of this figure attributable to local residents to determine the amount spent by tourists in a given business category, and (3) dividing these tourist expenditures by the proportion they represent of total tourist expenditures to determine the total amount spent by tourists in a given county. Spending by local residents is usually considered equal to the level of expenditures observed for some month during which tourism can be assumed to be non-existent or negligible (e.g., April). The proportion of total tourist expenditures spent in a given business category is usually obtained from local tourist surveys, the Census Bureau's National Travel Survey, or from AAA reports. Studies by Brueckheimer (1962) and McIntosh (1958) are examples of the application of this technique.

Limitations of Tax Collection Statistics

The Chain-Reporting Problem

The sales and use tax owed by franchise corporations (e.g., Holiday Inns) are paid in a lump sum by the corporate headquarters rather than by each of their affiliated properties. Consequently, these payments are recorded for the county or state containing the corporate headquarters. If the corporate headquarters is out-of-state, for example, payments would be included solely in the "out-of-state" row of the tables rather than the rows for individual counties containing properties affiliated with this franchise corporation. If franchise businesses conduct a significant share of the business in a given county, the sales and/or use tax statistics for that county will underestimate the volume of this business activity.

Classification Difficulties

When businesspersons apply for a sales tax license or a use tax registration, they complete an application that requires them to state which of the Department of Treasury's Business Classification Codes (BCCs) "best describes" their "principal business activity."[1] These responses are the basis for Treasury's categorization of sales and use tax collections under specific business types.

Someone operating a hotel in most cases would select BCC 701 - "Hotels, Tourist Courts, Motels" as the best description of their "principal business activity." However, if this hotel contains a restaurant which the applicant considers his or her "principal business activity," then he or she may classify the entire enterprise under BCC 584 - "Hotel Dining Rooms." Similarly, those operating ski areas containing lodging facilities may classify their enterprises under BCC 794 - "Sports Promoters and Commercial Operators, Miscellaneous Amusement and Recreation Services" rather than under BCC 701 - "Hotels, Tourist Courts, Motels." Thus the sales and use tax collections recorded under various BCCs may not include the payments of all enterprises involved in some way in the type of business included in that BCC.

Tax Cheating

Because of tax cheating, sales and use tax collections in some cases may not fully reflect business transactions. The Department of Treasury does not consider tax cheating to be a serious problem. However, the exact magnitude of the problem is unknown.

The above difficulties limit the usefulness of sales and use tax collections as indices of business volume. In particular, in counties that have numerous franchise businesses these statistics should not be used at all as estimators of business volume, and in counties that have few franchise businesses they should be considered only crude estimators of business volume.

These statistics can, however, be useful in documenting trends in business activity. If it can be reasonably assumed that changes in tax collections in a given county and BCC are not the result of businesses: (1) altering their business classification with the Department of Treasury, (2) changing their status as an independent or franchise business, and/or (3) increasing or decreasing tax cheating, then these shifts in tax collections can be attributed to changes in the volume of business activity in that county and BCC.

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[1] The Business Classification Codes employed by the Michigan Department of Treasury are not identical with the Standard Industrial Classification (SIC) codes employed by the federal government and the Michigan Employment Security Commission. While there are similarities between the two systems, there are also many differences. For example, BCC 557 is Watercraft Sales and Service, whereas SIC 557 is Motorcycle Dealers.

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Table 24-2. Sales and use tax collections by Michigan county by Business Classification Code, First Quarter 1985.

County	Watercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Hotel Dining Rooms (BCC 584)	Family Rest-aurants (BCC 585)	Fast Food Rest-aurants (BCC 586)	Sport-ing Goods (BCC 595)	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 0	$ 0	$ 0	$ 11,023	$ 0	$ 5,443	$ 542	$ 898	$ 627	$ 57
Alger	0	0	0	18,888	0	3,477	187	187	1,303	8,595
Allegan	3,363	5,122	6,149	58,465	0	93,877	18,368	3,938	11,539	9,682
Alpena	0	2,356	6,012	28,994	0	70,924	31,248	12,303	4,959	5,729
Antrim	10,558	0	289	10,007	0	22,386	2,585	12,180	20,828	25,471
Arenac	7,653	1,135	0	16,358	0	11,687	12,807	2,841	4,786	2,239
Baraga	0	0	939	5,607	0	7,696	1,354	1,445	608	1,230
Barry	174	1,387	1,048	19,348	0	49,138	1,798	13,222	0	1,254
Bay	16,941	660	42,941	92,410	0	233,051	79,961	61,893	2,349	7,857
Benzie	102	1,533	2,173	6,230	0	31,785	341	1,615	2,036	3,974
Berrien	15,132	25,848	19,042	151,138	0	187,193	189,614	27,667	24,541	32,744
Branch	444	3,242	6,085	20,686	0	57,878	8,689	6,068	847	3,455
Calhoun	2,055	3,604	6,792	100,785	0	660,244	108,415	13,024	6,789	24,715
Cass	2,375	1,204	3,062	38,796	0	16,886	12,437	775	359	506
Charlevoix	1,284	0	2,154	15,602	0	23,666	5,600	2,428	89,814	44,879
Cheboygan	15	1,594	755	20,100	0	19,051	14,152	1,772	4,191	4,829
Chippewa	0	1,765	116	33,844	912	69,268	22,073	9,196	4,940	8,937
Clare	0	2,813	1,935	19,403	0	24,503	3,109	13,699	11,616	4,481
Clinton	0	0	4,936	34,214	0	38,618	3,855	728	349	2,234
Crawford	0	0	643	12,611	0	26,824	1,602	2,851	16,206	30,133
Delta	1,071	5,165	51,088	54,213	0	99,040	13,448	6,906	6,164	9,755
Dickinson	1,680	7,147	9,102	30,675	0	23,598	72,931	4,624	8,370	11,897
Eaton	2	5,966	14,185	44,280	0	141,575	16,267	21,007	28,425	27,026
Emmet	8,461	210	2,335	45,620	367	42,548	10,244	46,003	19,472	33,997
Genesee	14,413	69,894	108,130	373,453	0	1,046,139	359,025	181,520	48,211	72,821
Gladwin	226	0	2,008	11,708	0	30,265	1,033	2,093	2,320	1,841
Gogebic	0	294	671	22,485	0	25,026	2,752	15,086	39,697	32,018
Grand Traverse	21,565	16,100	14,960	67,342	0	277,755	45,921	42,737	61,014	91,616
Gratiot	0	2,678	55,015	20,840	0	40,862	19,341	1,605	579	7,248
Hillsdale	365	2,663	3,605	20,981	0	72,451	13,073	2,292	464	2,470
Houghton	42	1,816	955	45,981	0	21,239	14,420	9,089	9,056	13,909
Huron	5,621	2,327	2,639	28,025	0	52,462	11,107	2,137	11,452	3,217
Ingham	10	41,686	99,279	355,844	7,204	597,724	259,863	35,795	43,722	42,177
Ionia	0	2,016	1,501	30,197	0	32,648	23,580	3,173	4,881	3,334
Iosco	0	0	3,465	25,786	61	38,720	8,630	3,192	4,572	8,013
Iron	27	1,528	5,462	14,295	0	22,532	1,754	5,859	980	2,509
Isabella	0	5,271	24,738	47,577	0	110,416	47,529	16,574	22,850	18,333
Jackson	1,052	16,595	4,543	110,216	0	381,742	125,755	18,895	18,579	34,847
Kalamazoo	21,465	118,085	56,677	162,121	0	385,130	370,618	40,938	32,802	30,313
Kalkaska	349	0	236	6,556	4,089	31,674	0	1,402	4,195	2,449
Kent	12,610	80,869	544,244	369,351	0	1,457,611	251,538	151,247	181,342	168,077
Keweenaw	0	0	0	1,790	0	1,524	0	3,384	3,265	822
Lake	0	0	0	12,067	0	4,744	6,382	1,269	848	1,146
Lapeer	7,648	2,629	6,044	39,383	2,883	108,912	21,903	1,690	641	1,816

Leelanau	255	0	0	11,415	2,695	19,491	2,527	671	22,465	22,676
Lenawee	0	7,280	6,526	72,725	0	160,018	30,939	13,742	16,620	4,629
Livingston	12,058	2,528	3,769	42,574	0	103,341	90,706	25,675	9,888	4,187
Luce	0	0	0	4,085	0	7,186	2,084	1,455	834	606
Mackinac	432	0	15	7,387	0	18,740	12,105	5,370	1,588	7,620
Macomb	512,806	152,793	47,493	737,217	829	1,529,967	313,865	135,441	52,632	104,160
Manistee	2,262	3,699	2,259	27,451	0	27,384	8,627	1,512	6,569	11,858
Marquette	740	823	10,889	62,271	0	132,917	23,577	22,272	17,515	14,565
Mason	31	6,173	2,851	24,450	0	45,299	13,022	4,897	1,447	5,130
Mecosta	826	4,515	460	36,348	0	32,006	19,336	16,169	7,179	7,031
Menominee	0	0	2,169	33,625	0	34,950	2,539	2,115	473	1,420
Midland	3,823	33,565	17,032	39,032	0	106,190	10,197	16,475	22,106	26,767
Missaukee	42	0	262	6,994	0	7,062	1,462	312	53	1,189
Monroe	13,410	6,686	8,471	81,508	0	94,663	21,966	33,013	12,462	23,870
Montcalm	1,308	105	6,133	34,363	1,075	60,628	4,056	4,508	2,118	490
Montmorency	3,375	269	0	7,618	0	10,329	4,181	1,303	1,274	2,610
Muskegon	13,931	21,754	8,236	131,840	0	236,012	99,742	32,584	6,244	3,457
Newaygo	8,198	8,913	8,895	20,087	0	42,763	2,427	4,783	1,093	590
Oakland	22,138	467,739	455,925	864,148	70,407	3,506,930	1,107,608	717,493	314,408	425,937
Oceana	11	0	0	15,435	0	18,454	1,732	2,644	925	669
Ogemaw	0	773	6,382	8,742	0	27,184	3,492	744	2,573	2,430
Ontonagon	0	1,461	0	13,876	0	8,851	1,329	2,688	2,089	10,932
Osceola	0	0	994	12,989	0	15,356	6,097	1,549	1,347	714
Oscoda	0	0	0	5,051	0	9,665	518	418	2,861	998
Otsego	0	1,202	1,855	12,664	0	44,778	4,122	5,038	16,633	31,708
Ottawa	32,145	31,962	14,354	73,614	0	239,686	44,650	55,537	41,907	20,161
Presque Isle	0	1,156	303	18,387	0	10,202	187	489	2,208	1,584
Roscommon	1,616	1,385	1,996	26,549	0	29,976	16,078	870	20,209	17,053
Saginaw	4,310	60,871	132,554	192,231	6,475	482,321	28,421	55,912	25,869	23,429
St. Clair	17,592	14,823	128,789	93,977	3,465	233,632	58,061	14,857	26,187	26,695
St. Joseph	5,804	3,035	7,837	74,277	925	142,931	20,027	5,885	11,970	7,693
Sanilac	6,281	384	2,849	32,483	0	27,890	10,070	693	6,799	2,167
Schoolcraft	0	0	378	9,963	0	8,277	0	493	3,674	6,499
Shiawassee	0	3,520	5,466	49,874	0	88,426	23,628	27,674	503	6,299
Tuscola	22,888	1,669	5,822	45,644	0	46,544	7,400	8,948	764	1,685
Van Buren	2,053	2,854	874	46,615	0	63,063	9,292	8,616	2,399	928
Washtenaw	3,390	42,204	54,486	156,655	36,472	563,995	223,384	44,219	54,045	71,225
Wayne	109,597	308,407	736,116	1,694,583	N.A.	4,455,424	1,260,838	277,905	267,844	494,333
Wexford	0	7,443	10,255	29,597	0	54,797	5,392	6,879	20,763	19,758
Out of state	512	331,155	2,142,499	14,648	48,844	4,744,463	1,966,679	146,483	735,672	930,819
Total	$958,537	$1,966,348	$4,951,147	$7,528,287	N.A.	$24,191,723	$7,678,214	$2,515,578	$2,506,797	$3,191,223

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-3. Sales and use tax collections by Michigan county by Business Classification Code, Second Quarter 1985.

County	Watercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Hotel Dining Rooms (BCC 584)	Family Rest-aurants (BCC 585)	Fast Food Rest-aurants (BCC 586)	Sport-ing Goods (BCC 595)	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 1,251	$ 0	$ 0	$ 18,194	$ 0	$ 12,673	$ 2,513	$ 2,118	$ 995	$ 1,324
Alger	0	0	0	22,910	157	5,646	276	172	2,784	12,536
Allegan	67,755	7,225	9,987	89,894	3,446	138,604	31,402	7,001	16,613	28,571
Alpera	1,104	2,433	8,007	33,322	212	92,640	34,741	22,053	7,634	11,267
Antrim	32,580	0	869	20,404	0	33,309	3,310	7,715	14,848	18,570
Arenac	17,323	1,433	0	23,733	0	23,462	21,546	4,931	9,747	4,256
Baraga	0	0	1,252	6,715	0	9,951	4,306	1,101	639	2,876
Barry	955	1,853	1,188	21,632	0	53,359	7,857	13,106	641	1,810
Bay	32,272	654	49,995	103,703	0	278,658	106,682	114,956	2,745	12,788
Benzie	5,227	1,992	3,217	9,524	0	39,306	909	4,880	4,276	7,636
Berrien	49,296	34,440	24,001	198,218	0	246,108	253,035	53,726	30,915	57,728
Branch	15,979	4,015	8,768	23,285	0	74,164	18,548	16,240	7,455	8,980
Calhoun	9,976	3,699	9,456	107,254	0	763,360	136,555	26,418	9,008	31,067
Cass	14,476	1,324	5,921	49,765	0	19,342	18,918	3,390	367	2,113
Charlevoix	21,829	154	5,321	22,244	0	35,663	12,644	3,768	32,634	29,315
Cheboygan	1,813	1,769	906	25,644	3,475	28,362	18,020	7,276	5,658	11,686
Chippewa	45	2,217	0	41,600	545	92,573	28,220	11,971	11,895	21,452
Clare	0	3,245	2,027	23,714	0	34,383	8,426	17,343	13,018	8,693
Clinton	0	0	5,504	34,291	0	48,848	5,530	2,138	272	2,388
Crawford	679	0	1,231	16,930	0	35,835	4,230	4,247	24,919	27,850
Delta	1,969	5,227	64,274	53,482	0	115,834	19,182	13,525	8,807	18,425
Dickinson	3,980	8,125	9,770	30,971	0	30,079	92,279	5,716	7,929	15,100
Eaton	35	7,683	22,176	50,068	0	169,300	33,628	42,327	28,590	25,486
Emmet	32,753	671	10,541	67,330	0	89,372	19,907	22,264	17,094	56,800
Genesee	61,822	84,478	114,423	362,689	0	1,259,587	433,061	354,032	52,329	89,633
Gladwin	10,060	0	3,413	15,463	0	45,725	2,500	7,878	2,761	2,323
Gogebic	0	726	738	20,848	0	24,074	5,303	4,126	8,229	17,432
Grand Traverse	57,744	21,199	18,339	80,989	0	323,858	64,246	59,403	82,462	166,610
Gratiot	0	3,079	66,741	23,691	0	50,940	26,832	4,395	437	9,839
Hillsdale	1,798	3,737	2,939	25,293	0	89,037	19,398	6,283	412	3,763
Houghton	239	1,937	1,150	44,707	0	27,193	19,209	10,761	17,261	15,439
Huron	36,862	3,868	4,366	29,101	0	79,965	19,528	6,335	14,912	7,070
Ingham	0	62,106	106,930	366,939	8,838	668,965	297,282	64,821	35,753	54,610
Ionia	0	5,707	2,660	29,628	0	39,922	32,715	7,723	8,317	3,923
Iosco	1,265	0	4,632	31,277	114	69,776	16,593	7,603	7,195	17,866
Iron	50	1,648	7,129	14,684	0	29,531	3,449	2,002	2,140	3,757
Isabella	0	5,775	14,684	49,770	0	120,798	52,136	16,677	24,606	26,818
Jackson	5,522	19,896	4,659	123,707	0	444,045	165,648	33,308	28,964	35,723
Kalamazoo	125,462	124,586	67,978	171,329	0	426,272	436,667	94,615	26,468	44,219
Kalkaska	4,720	0	216	8,188	4,518	42,622	0	3,209	7,532	2,517
Kent	36,103	95,705	604,563	374,426	0	1,579,064	326,914	283,604	208,097	216,087
Keweenaw	0	0	255	2,291	0	2,004	67	2,274	2,877	2,128
Lake	0	0	0	15,562	0	8,273	12,788	3,965	2,679	1,769
Lapeer	22,121	2,310	7,598	43,451	3,323	123,249	30,791	2,869	617	3,956

Leelanau	0	0	295	15,197	4,996	38,623	6,574	2,248	19,609	24,430
Lenawee	0	9,624	8,781	75,473	0	187,935	51,402	37,103	19,380	6,151
Livingston	43,409	4,664	4,072	49,183	0	123,857	124,395	33,453	8,035	11,045
Luce	219	0	0	3,421	0	10,043	2,979	2,530	1,440	3,542
Mackinac	1,755	242	338	28,648	0	60,079	21,660	14,068	127,117	53,598
Macomb	889,413	180,805	78,032	794,694	826	1,711,713	389,695	283,890	50,670	133,546
Manistee	6,917	4,158	2,550	36,213	0	38,012	17,347	4,349	15,941	16,710
Marquette	8,061	1,296	15,264	72,777	0	153,325	33,136	28,175	27,736	22,078
Mason	674	6,510	5,025	27,977	0	87,542	24,513	10,302	3,736	16,609
Mecosta	13,192	7,587	814	36,018	0	35,047	26,978	20,735	8,916	10,173
Menominee	0	0	2,663	35,047	0	42,917	3,444	2,727	1,144	4,051
Midland	16,500	33,398	17,010	40,329	0	128,269	12,764	29,142	23,236	30,799
Missaukee	10	0	454	9,992	0	9,125	3,716	1,292	103	1,676
Monroe	89,421	8,557	10,294	89,772	0	116,785	36,938	25,226	14,221	32,918
Montcalm	4,520	0	7,626	38,409	1,177	87,337	10,890	14,695	3,208	869
Montmorency	4,576	482	0	10,749	0	16,169	7,241	2,581	2,392	4,964
Muskegon	52,970	26,078	9,274	133,426	0	276,980	136,361	123,341	6,143	14,576
Newaygo	23,680	9,708	9,568	27,915	0	57,036	7,959	11,163	1,914	1,160
Oakland	102,527	567,602	510,363	889,079	80,724	3,818,527	1,446,125	896,584	339,173	505,799
Oceana	379	0	0	23,849	0	32,633	7,289	4,523	2,618	2,300
Ogemaw	0	1,124	7,293	10,479	0	39,560	7,436	2,204	3,907	4,002
Ontonagon	0	2,244	0	14,445	0	11,812	7,476	2,142	1,479	11,212
Osceola	0	0	1,204	15,951	0	22,594	11,537	975	2,367	750
Oscoda	0	0	0	5,449	0	13,006	4,947	888	3,754	1,773
Otsego	0	1,389	4,209	13,727	0	60,216	6,723	3,491	15,141	34,449
Ottawa	107,788	32,602	19,746	86,664	0	316,429	75,817	102,802	66,802	39,792
Presque Isle	0	1,414	567	18,092	0	16,196	947	586	2,608	1,926
Roscommon	11,161	2,594	3,934	30,811	0	47,942	28,984	3,509	29,412	21,146
Saginaw	18,180	64,522	149,048	210,284	6,664	613,248	37,133	57,495	30,443	38,353
St. Clair	61,977	15,356	159,128	119,109	3,729	298,880	75,564	32,838	40,686	40,075
St. Joseph	12,122	4,144	9,393	95,129	1,093	187,144	30,970	13,908	15,823	10,292
Sanilac	6,596	0	5,899	36,189	0	53,642	14,370	4,080	9,064	14,437
Schoolcraft	0	0	582	10,079	0	15,702	0	1,024	6,754	15,035
Shiawassee	0	3,746	7,462	50,040	0	108,588	31,809	41,500	483	6,779
Tuscola	53,540	2,919	6,486	47,708	0	58,091	11,718	41,225	1,065	2,509
Van Buren	11,911	2,495	1,232	58,247	0	96,951	29,766	18,386	12,062	9,000
Washtenaw	12,174	50,141	75,710	161,501	43,576	627,296	260,568	96,956	50,962	100,774
Wayne	560,078	370,187	1,063,341	1,815,574	4,808	4,899,782	1,478,363	486,569	330,152	610,124
Wexford	629	10,611	8,842	33,370	0	59,344	7,351	8,515	10,923	12,747
Out of state	0	441,977	2,689,296	2,144,462	37,707	5,019,130	2,426,615	369,156	730,224	1,170,326
Total	$2,789,444	$2,393,092	$6,173,619	$10,344,338	$209,928	$27,523,238	$9,767,291	$4,220,641	$2,834,374	$4,186,694

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-4. Sales and use tax collections by Michigan county by Business Classification Code, Third Quarter 1985.

County	Watercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Hotel Dining Rooms (BCC 584)	Family Rest- aurants (BCC 585)	Fast Food Rest- aurants (BCC 586)	Sport- ing Goods (BCC 595)	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 1,624	$ 0	$ 0	$ 25,495	$ 0	$ 21,042	$ 4,049	$ 4,994	$ 3,191	$ 6,741
Alger	0	0	0	32,183	632	15,077	344	156	9,420	29,970
Allegan	41,963	11,102	13,778	106,952	7,357	165,521	34,025	7,582	19,968	52,667
Alpena	1,647	2,700	8,627	32,325	2,216	114,699	43,005	13,716	8,038	20,291
Antrim	25,737	0	1,896	28,855	0	56,448	4,492	16,896	48,772	61,926
Arenac	17,275	1,752	0	28,709	0	39,871	27,884	5,524	2,229	5,924
Baraga	0	0	1,343	7,299	0	13,382	3,917	1,023	2,008	3,446
Barry	1,301	1,781	1,156	21,996	0	45,260	8,766	22,985	1,863	2,536
Bay	30,574	518	38,722	104,949	0	291,587	111,418	95,788	2,330	18,438
Benzie	9,528	4,059	6,117	14,003	0	81,552	2,142	11,841	12,776	24,479
Berrien	34,663	29,010	23,879	206,663	0	295,052	281,652	52,808	36,063	69,864
Branch	18,029	4,131	7,358	21,967	0	80,834	15,598	15,353	8,095	17,909
Calhoun	7,676	1,528	8,589	103,658	0	764,319	140,939	25,153	11,492	35,735
Cass	5,560	1,426	7,725	54,308	0	22,112	18,731	4,200	1,179	4,043
Charlevoix	36,022	1,086	11,949	36,645	0	73,875	19,923	6,918	67,144	64,231
Cheboygan	3,999	2,440	575	31,519	8,565	50,511	44,361	9,876	10,916	32,845
Chippewa	30	2,841	0	55,357	N.A.	143,914	31,918	13,172	31,366	60,083
Clare	0	3,439	2,569	26,529	0	41,494	8,486	25,650	15,676	11,580
Clinton	239	0	5,282	32,055	0	52,311	6,078	2,620	0	2,758
Crawford	911	0	1,777	22,299	0	50,390	6,371	4,323	25,296	47,484
Delta	1,651	4,512	80,787	64,884	0	142,783	22,332	11,996	25,377	32,849
Dickinson	4,155	9,961	9,637	31,878	0	35,703	102,768	4,564	8,695	22,374
Eaton	56	6,346	19,298	42,891	0	163,942	54,047	50,823	21,655	21,374
Emmet	87,010	1,247	36,866	131,670	0	216,750	39,519	53,925	58,133	220,928
Genesee	33,567	68,676	120,382	357,436	0	1,224,795	442,984	323,073	53,616	106,724
Gladwin	7,328	0	3,329	21,279	0	54,366	3,057	9,180	2,899	2,885
Gogebic	0	662	590	25,510	0	31,624	6,152	1,409	13,570	21,434
Grand Traverse	46,720	27,167	29,798	122,701	0	459,457	84,308	80,004	138,560	435,987
Gratiot	0	2,946	70,276	23,176	0	51,520	27,390	5,465	483	13,650
Hillsdale	1,654	4,388	6,126	26,917	0	100,325	19,443	6,455	1,266	4,313
Houghton	132	2,578	1,437	49,571	0	41,133	21,429	12,578	27,884	29,109
Huron	27,413	3,914	4,256	40,112	0	103,972	21,913	8,338	19,521	13,815
Ingham	5,392	89,272	90,430	355,113	7,309	693,764	249,795	53,617	34,770	57,829
Ionia	0	2,793	1,955	29,605	0	44,932	35,945	5,945	8,664	5,446
Iosco	3,849	0	6,515	41,620	0	104,334	18,968	14,773	10,540	50,830
Iron	37	1,989	8,682	16,999	0	37,314	4,971	2,607	2,266	7,643
Isabella	0	6,300	15,638	51,635	0	138,506	55,673	17,605	30,971	29,370
Jackson	3,693	17,532	4,733	128,548	0	435,252	167,310	26,722	32,458	39,782
Kalamazoo	93,574	151,104	72,047	167,840	0	429,714	448,277	83,737	25,428	54,985
Kalkaska	4,670	0	163	9,512	5,044	54,730	0	4,935	6,773	5,706
Kent	31,986	99,170	615,855	373,982	0	1,560,104	373,589	193,743	184,518	208,754
Keweenaw	0	0	380	2,860	0	7,853	144	3,563	9,936	10,350
Lake	0	0	0	17,739	0	13,567	16,470	5,005	2,103	4,742
Lapeer	14,061	2,854	11,083	41,199	3,278	124,830	33,757	4,138	622	6,794

Leelanau	2,560	0	819	24,234	10,335	86,069	15,219	6,255	57,725	109,640
Lenawee	0	10,603	9,266	77,192	0	192,523	53,117	30,176	17,445	7,502
Livingston	23,538	3,515	3,857	51,831	0	126,326	130,474	26,070	1,652	19,848
Luce	1,802	0	0	4,969	0	16,398	4,005	3,121	4,644	7,046
Mackinac	3,521	1,267	1,961	60,937	0	140,874	20,479	13,490	347,293	188,125
Macomb	540,623	163,491	71,023	769,201	506	1,820,195	388,943	246,466	43,501	142,827
Manistee	6,452	4,825	2,309	44,940	0	51,319	24,546	14,259	25,527	47,350
Marquette	6,212	786	19,702	76,985	0	185,511	40,332	29,383	34,823	36,297
Mason	830	8,090	6,422	34,538	0	131,721	30,016	16,308	7,483	44,016
Mecosta	12,804	4,437	1,147	36,303	0	41,666	28,811	20,239	9,469	11,742
Menominee	0	0	2,297	35,947	0	36,610	16,009	2,887	908	6,902
Midland	10,475	33,234	18,858	38,401	0	130,792	12,861	30,051	20,673	36,004
Missaukee	0	0	566	10,660	0	10,993	4,788	1,684	177	3,256
Monroe	41,860	7,854	9,614	98,108	0	111,897	35,572	32,621	14,051	37,347
Montcalm	3,795	0	9,217	41,604	1,334	106,652	11,186	9,159	3,585	965
Montmorency	6,465	642	0	16,730	0	24,812	10,326	2,826	3,059	7,896
Muskegon	46,009	25,133	10,256	133,633	0	296,261	101,175	73,032	14,471	20,737
Newaygo	20,501	12,918	12,461	28,865	0	69,330	8,608	10,924	2,344	1,458
Oakland	60,706	529,273	518,783	859,826	70,936	3,804,204	1,507,879	933,599	348,629	574,804
Oceana	2,114	0	0	30,564	0	41,440	11,271	9,943	5,428	6,726
Ogemaw	0	1,380	9,335	10,926	0	50,859	9,503	2,930	5,214	8,100
Ontonagon	0	2,352	0	20,058	0	17,914	3,255	2,579	2,604	14,845
Osceola	0	0	1,407	14,203	0	24,984	12,890	1,122	1,864	744
Oscoda	0	0	0	7,084	0	16,029	7,655	842	4,814	3,183
Otsego	0	1,736	3,266	17,756	0	92,103	8,132	7,940	24,508	69,932
Ottawa	98,668	42,446	21,807	91,536	0	386,150	88,473	93,580	95,764	68,573
Presque Isle	0	1,872	668	20,800	0	30,770	1,346	1,754	6,012	3,806
Roscommon	3,869	4,455	5,790	43,922	0	78,323	43,137	6,801	35,360	51,476
Saginaw	11,811	57,431	158,483	199,325	6,327	703,003	38,273	48,830	35,055	55,236
St. Clair	43,376	21,242	174,490	136,525	3,374	328,570	92,016	31,612	47,697	54,007
St. Joseph	5,966	4,648	9,672	101,239	1,061	165,483	32,455	14,809	14,725	63,501
Sanilac	1,800	0	8,122	38,008	0	58,498	15,465	5,479	11,159	8,977
Schoolcraft	0	0	689	12,091	0	24,064	0	1,082	9,514	40,290
Shiawassee	0	3,738	7,300	47,157	0	108,516	29,559	38,188	12	7,942
Tuscola	24,625	2,928	7,107	48,172	0	59,738	13,342	16,025	980	11,417
Van Buren	12,285	4,251	1,686	69,476	0	111,127	34,662	13,350	19,380	28,594
Washtenaw	9,290	49,382	93,287	175,618	38,953	672,297	268,352	94,200	51,743	122,728
Wayne	247,833	320,014	950,478	1,755,184	3,476	4,886,546	1,512,142	413,891	285,134	657,786
Wexford	363	10,965	12,063	35,699	0	69,659	9,250	11,720	15,629	21,313
Out of state	0	469,240	2,666,037	20,034	36,199	5,265,489	2,570,946	507,749	822,634	1,293,289
Total	$1,853,879	$2,375,372	$6,181,850	$8,508,724	N.A.	$29,266,236	$10,310,810	$4,151,754	$3,491,219	$5,876,850

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-5. Sales and use tax collections by Michigan county by Business Classification Code, Fourth Quarter 1985.

County	Watercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Hotel Dining Rooms (BCC 584)	Family Rest- aurants (BCC 585)	Fast Food Rest- aurants (BCC 586)	Sport- ing Goods (BCC 595)	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 259	$ 0	$ 0	$ 17,674	$ 0	$ 12,298	$ 187	$ 2,499	$ 1,219	$ 922
Alger	0	0	0	21,021	335	5,025	206	373	1,267	11,441
Allegan	3,926	8,029	9,883	65,732	1,817	112,964	19,744	5,975	15,645	14,385
Alpena	249	4,554	10,676	32,997	597	89,983	41,496	22,005	7,234	9,317
Antrim	5,956	0	806	16,045	0	28,995	2,572	7,676	17,665	17,455
Arenac	4,551	2,136	0	22,401	0	22,180	19,305	2,714	1,245	3,038
Baraga	0	0	1,793	6,338	0	9,356	1,867	1,951	1,165	1,547
Barry	453	2,540	681	20,956	0	39,715	2,215	27,970	22	1,478
Bay	14,372	821	63,067	101,426	0	272,283	98,199	47,432	2,719	11,363
Benzie	1,278	2,344	3,406	6,399	0	34,824	466	2,698	5,805	7,151
Berrien	11,021	47,358	26,133	169,364	0	221,445	235,911	39,641	32,153	41,118
Branch	950	4,693	7,087	22,447	0	60,927	8,056	8,395	6,578	10,548
Calhoun	3,405	2,663	10,127	106,095	0	726,853	120,191	21,591	10,110	22,885
Cass	3,707	2,356	5,515	42,557	0	22,067	12,396	2,948	267	724
Charlevoix	3,675	0	5,304	18,235	0	27,463	5,100	4,303	51,436	24,394
Cheboygan	6,513	2,707	136	21,831	731	26,093	22,636	5,612	5,300	5,427
Chippewa	5	3,303	0	41,358	235	74,997	31,928	15,055	9,016	15,592
Clare	0	4,747	2,563	26,192	0	31,616	3,665	33,172	13,620	7,700
Clinton	0	0	5,187	35,299	0	44,513	5,275	1,645	0	2,214
Crawford	42	0	1,300	16,042	0	30,835	2,509	3,522	17,118	25,721
Delta	1,201	11,696	92,968	65,047	0	104,428	15,897	12,160	6,898	11,030
Dickinson	2,285	15,905	11,520	29,973	0	31,026	82,156	8,313	7,621	15,146
Eaton	34	12,120	22,834	45,229	0	163,101	50,657	33,809	34,715	32,195
Emmet	23,589	1,090	8,925	67,768	69	63,438	10,178	56,547	16,566	39,586
Genesee	7,819	123,126	167,305	384,781	0	1,207,598	406,520	314,717	48,002	74,287
Gladwin	729	0	3,015	17,557	0	38,817	1,633	5,596	3,108	2,512
Gogebic	1	1,288	470	20,613	0	22,043	3,479	6,898	16,464	17,613
Grand Traverse	10,961	26,716	23,406	84,145	0	302,877	59,167	67,214	46,802	96,294
Gratiot	0	5,455	63,599	22,696	0	49,205	23,537	2,989	416	11,970
Hillsdale	462	7,095	6,399	25,536	0	81,365	15,311	4,606	1,674	2,688
Houghton	36	2,048	1,326	41,205	0	24,520	19,150	16,042	14,197	15,554
Huron	3,915	5,178	5,886	33,063	0	68,615	13,583	5,672	11,426	5,999
Ingham	2,876	94,875	109,025	391,815	8,112	646,043	245,517	50,666	34,338	51,072
Ionia	0	10,828	2,780	29,543	0	36,965	27,303	4,557	5,171	3,409
Iosco	187	0	4,315	35,791	0	57,201	8,922	5,687	6,903	13,939
Iron	19	3,092	7,590	16,084	0	28,529	2,241	4,073	2,007	3,811
Isabella	0	7,801	18,838	50,141	0	125,940	64,144	18,666	21,377	22,590
Jackson	2,511	30,342	18,343	124,544	0	424,940	144,531	26,448	23,274	34,870
Kalamazoo	37,775	198,628	71,542	182,532	0	425,825	429,918	61,309	28,616	43,159
Kalkaska	682	0	613	6,745	4,358	39,306	0	5,000	6,895	2,445
Kent	7,560	141,146	852,633	409,819	0	1,547,185	322,517	170,832	231,487	212,843
Keweenaw	0	0	407	2,171	0	2,431	36	4,111	2,407	1,599
Lake	0	0	0	23,384	0	9,738	2,432	5,137	1,231	2,007
Lapeer	4,640	4,892	11,926	41,477	3,371	115,688	26,635	4,110	498	5,721

Leelanau	7	386	75	13,736	3,978	25,773	3,689	1,410	17,903	21,869
Lenawee	0	11,882	11,028	77,389	0	174,497	36,551	20,257	9,867	5,193
Livingston	7,695	6,878	5,613	49,426	0	126,591	115,068	30,960	1,460	16,055
Luce	14	0	0	5,498	0	7,555	2,508	2,988	1,262	1,519
Mackinac	815	0	309	16,966	0	34,402	8,370	9,450	59,806	20,097
Macomb	350,478	269,514	86,935	808,055	372	1,876,295	367,622	182,393	51,392	124,930
Manistee	1,557	5,958	2,006	34,420	0	34,884	11,147	5,062	9,294	18,501
Marquette	1,639	1,343	20,891	70,783	0	154,010	34,282	36,197	21,362	19,693
Mason	95	9,411	5,126	29,278	0	69,329	16,457	11,140	2,424	7,985
Mecosta	3,811	6,241	2,791	38,283	0	39,027	37,677	23,283	8,327	9,658
Menominee	0	0	2,477	37,245	0	26,961	15,533	1,349	822	3,211
Midland	2,614	46,985	29,320	40,316	0	123,136	10,950	26,425	25,410	31,948
Missaukee	0	0	85	9,396	0	7,810	2,269	1,293	243	1,627
Monroe	11,581	12,261	11,758	97,049	0	102,961	27,539	43,417	15,943	29,538
Montcalm	1,602	0	9,105	42,546	1,442	85,393	2,984	7,309	3,345	735
Montmorency	4,652	405	0	12,877	0	16,792	6,729	2,192	1,437	4,087
Muskegon	24,149	39,495	8,593	136,433	0	256,441	80,058	38,669	6,320	5,121
Newaygo	3,383	16,531	12,444	24,893	0	48,524	4,557	11,357	2,087	1,097
Oakland	12,323	843,976	648,420	933,841	83,746	3,804,284	1,360,760	1,370,008	422,003	540,321
Oceana	279	0	0	22,182	0	22,926	1,885	4,650	328	1,033
Ogemaw	0	1,747	5,757	12,871	0	39,437	4,947	2,004	3,177	5,341
Ontonagon	0	2,870	0	18,372	0	10,748	1,795	3,718	2,166	12,408
Osceola	0	0	954	16,000	0	21,660	9,646	2,773	2,087	735
Oscoda	0	0	0	8,773	0	13,251	4,197	1,002	2,051	2,127
Otsego	0	2,071	2,947	15,126	0	53,950	9,493	8,670	14,397	29,450
Ottawa	75,069	45,158	20,819	73,829	0	320,050	48,851	70,900	49,843	32,518
Presque Isle	0	2,524	465	19,321	0	17,499	368	972	2,502	1,782
Roscommon	1,192	3,460	2,593	31,546	0	38,135	24,156	1,732	24,878	20,680
Saginaw	2,929	102,414	201,122	209,503	6,353	660,112	33,247	75,196	33,237	37,682
St. Clair	19,062	12,592	202,296	114,722	3,882	282,078	73,501	29,364	33,945	32,884
St. Joseph	4,815	6,472	16,513	84,756	936	132,321	24,731	8,855	10,093	8,928
Sanilac	14,042	0	5,941	33,076	0	37,568	12,872	2,870	9,482	2,644
Schoolcraft	0	0	286	11,309	0	12,337	0	1,092	5,264	11,599
Shiawassee	0	8,409	8,519	46,792	0	102,805	25,316	42,314	16	7,291
Tuscola	10,137	4,856	8,548	48,674	0	52,243	9,914	7,328	1,116	2,873
Van Buren	1,320	1,701	1,346	56,901	0	78,178	13,946	16,486	5,891	2,321
Washtenaw	2,012	82,389	112,432	166,288	46,378	670,177	311,656	100,407	54,798	105,608
Wayne	76,558	577,196	1,518,715	1,882,099	2,720	4,856,981	1,387,641	408,141	298,393	529,001
Wexford	141	14,048	10,875	28,712	0	50,332	7,001	16,722	18,866	12,051
Out of state	1	678,383	3,549,102	1,209,040	47,487	5,028,698	2,423,276	792,204	876,524	1,193,668
Total	$801,616	$3,609,128	$8,185,535	$9,550,390	$216,919	$27,027,407	$9,182,577	$4,574,895	$2,881,438	$3,872,568

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-6. Sales and use tax collections by Michigan county by Business Classification Code, totals for 1985.

County	Watercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Hotel Dining Rooms (BCC 584)	Family Rest- aurants (BCC 585)	Fast Food Rest- aurants (BCC 586)	Sport- ing Goods (BCC 595)	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 3,134	$ 0	$ 0	$ 72,386	$ 0	$ 51,456	$ 7,291	$ 10,509	$ 6,032	$ 9,044
Alger	0	0	0	95,002	1,124	29,225	1,013	888	14,774	62,542
Allegan	117,007	31,478	39,797	321,043	12,620	510,966	103,539	24,496	63,765	105,305
Alpena	3,000	12,043	33,322	127,638	3,025	368,246	150,490	70,077	27,865	46,604
Antrim	74,831	0	3,860	75,311	0	141,138	12,959	44,467	102,113	123,422
Arenac	46,802	6,456	0	91,201	0	97,200	81,542	16,010	18,007	15,457
Baraga	0	0	5,327	25,959	0	40,385	11,444	5,520	4,420	9,099
Barry	2,883	7,561	4,073	83,932	0	187,472	20,636	77,283	2,526	7,078
Bay	94,159	2,653	194,725	402,488	0	1,075,579	396,260	320,069	10,143	50,446
Benzie	16,135	9,928	14,913	36,156	0	187,467	3,858	21,034	24,893	43,240
Berrien	110,112	136,656	93,055	725,383	0	949,798	960,212	173,842	123,672	201,454
Branch	35,402	16,081	29,298	88,385	0	273,803	50,891	46,056	22,975	40,892
Calhoun	23,112	11,494	34,964	417,792	0	2,914,776	506,100	86,186	37,399	114,402
Cass	26,118	6,310	22,223	185,426	0	80,407	62,482	11,313	2,172	7,386
Charlevoix	62,810	1,240	24,728	92,726	0	160,667	43,267	17,417	241,028	162,819
Cheboygan	12,340	8,510	2,372	99,094	12,771	124,017	99,169	24,536	26,065	54,787
Chippewa	80	10,126	116	172,159	2,021	380,752	114,139	49,394	57,217	106,064
Clare	0	14,244	9,094	95,838	0	131,996	23,686	89,864	53,930	32,454
Clinton	239	0	20,909	135,859	0	184,290	20,738	7,131	621	9,594
Crawford	1,632	0	4,951	67,882	0	143,884	14,712	14,943	83,539	131,188
Delta	5,892	26,600	289,117	237,626	0	462,085	70,859	44,587	47,246	72,059
Dickinson	12,100	41,138	40,029	123,497	0	120,406	350,134	23,217	32,615	64,517
Eaton	127	32,115	78,493	182,468	0	637,918	154,599	147,966	113,385	106,081
Emmet	151,813	3,218	58,667	312,388	436	412,108	79,848	178,739	111,265	351,311
Genesee	117,621	346,174	510,240	1,478,359	0	4,738,119	1,641,590	1,173,342	202,158	343,465
Gladwin	18,343	0	11,765	66,007	0	169,173	8,223	24,747	11,088	9,561
Gogebic	1	2,970	2,469	89,456	0	102,767	17,686	27,519	77,960	88,497
Grand Traverse	136,990	91,182	86,503	355,177	0	1,363,947	253,642	249,358	328,838	790,507
Gratiot	0	14,158	255,631	90,403	0	192,527	97,100	14,454	1,915	42,707
Hillsdale	4,279	17,883	19,069	98,727	0	343,178	67,225	19,636	3,816	13,234
Houghton	449	8,379	4,868	181,464	0	114,085	74,208	48,470	68,398	74,011
Huron	73,811	15,287	17,147	130,301	0	305,014	66,131	22,482	57,311	30,101
Ingham	8,278	287,939	405,664	1,469,711	31,463	2,606,496	1,052,457	204,899	148,583	205,688
Ionia	0	21,344	8,896	118,973	0	154,467	119,543	21,398	27,033	16,112
Iosco	5,301	0	18,927	134,474	175	270,031	53,113	31,255	29,210	90,648
Iron	133	8,257	28,863	62,062	0	117,906	12,415	14,541	7,393	17,720
Isabella	0	25,147	73,898	199,123	0	495,660	219,482	69,522	99,804	97,111
Jackson	12,778	84,365	32,278	487,015	0	1,685,979	603,244	105,373	103,275	145,222
Kalamazoo	278,276	592,403	268,244	683,822	0	1,666,941	1,685,480	280,599	113,314	172,676
Kalkaska	10,421	0	1,228	31,001	18,009	168,332	0	14,546	25,395	13,117
Kent	88,259	416,890	2,617,295	1,527,578	0	6,143,964	1,274,558	799,426	805,444	805,761
Keweenaw	0	0	1,042	9,112	0	13,812	247	13,332	18,485	14,899
Lake	0	0	0	68,752	0	36,322	38,072	15,376	6,861	9,664
Lapeer	48,470	12,685	36,651	165,510	12,855	472,679	113,086	12,807	2,378	18,287

Leelanau	2,822	386	1,189	64,582	22,004	169,956	28,009	10,584	117,702	178,615
Lenawee	0	39,389	35,601	302,779	0	714,973	172,009	101,278	63,312	23,475
Livingston	86,700	17,585	17,311	193,014	0	480,115	460,643	116,158	21,035	51,135
Luce	2,035	0	0	17,973	0	41,182	11,576	10,094	8,180	12,713
Mackinac	6,523	1,509	2,623	113,938	0	254,095	62,614	42,378	535,804	269,440
Macomb	2,293,320	766,603	283,483	3,109,167	2,533	6,938,170	1,460,125	848,190	198,195	505,463
Manistee	17,188	18,640	9,124	143,024	0	151,599	61,667	25,182	57,331	94,419
Marquette	16,652	4,248	66,746	282,816	0	625,763	131,327	116,027	101,436	92,633
Mason	1,630	30,184	19,424	116,243	0	333,891	84,008	42,647	15,090	73,740
Mecosta	30,633	22,780	5,212	146,952	0	147,746	112,802	80,426	33,891	38,604
Menominee	0	0	9,606	141,864	0	141,438	37,525	9,078	3,347	15,584
Midland	33,412	147,182	82,220	158,078	0	488,387	46,772	102,093	91,425	125,518
Missaukee	52	0	1,367	37,042	0	34,990	12,235	4,581	576	7,748
Monroe	156,272	35,358	40,137	366,437	0	426,306	122,015	134,277	56,677	123,673
Montcalm	11,225	105	32,081	156,922	5,028	340,010	29,116	35,671	12,256	3,059
Montmorency	19,068	1,798	0	47,974	0	68,102	28,477	8,902	8,162	19,557
Muskegon	137,059	112,460	36,359	535,332	0	1,065,694	417,336	267,626	33,178	43,891
Newaygo	55,762	48,070	43,368	101,760	0	217,653	23,551	38,227	7,438	4,305
Oakland	197,694	2,408,590	2,133,491	3,546,894	305,813	14,933,945	5,422,372	3,917,684	1,424,213	2,046,861
Oceana	2,783	0	0	92,030	0	115,453	22,177	21,760	9,299	10,728
Ogemaw	0	5,024	28,767	43,018	0	157,040	25,378	7,882	14,871	19,873
Ontonagon	0	8,927	0	66,751	0	49,325	13,855	11,127	8,338	49,397
Osceola	0	0	4,559	59,143	0	84,594	40,170	6,419	7,665	2,943
Oscoda	0	0	0	26,357	0	51,951	17,317	3,150	13,480	8,081
Otsego	0	6,398	12,277	59,273	0	251,047	28,470	25,139	70,679	165,539
Ottawa	313,670	152,168	76,726	325,643	0	1,262,315	257,791	322,819	254,316	161,044
Presque Isle	0	6,966	2,003	76,600	0	74,667	2,848	3,801	13,330	9,098
Roscommon	17,838	11,894	14,313	132,828	0	194,376	112,355	12,912	109,859	110,355
Saginaw	37,230	285,238	641,207	811,343	25,819	2,458,684	137,074	237,433	124,604	154,700
St. Clair	142,007	64,013	664,703	464,333	14,450	1,143,160	299,142	108,671	148,515	153,661
St. Joseph	28,707	18,299	43,415	355,401	4,015	627,879	108,183	43,457	52,611	90,414
Sanilac	28,719	384	22,811	139,756	0	177,598	52,777	13,122	36,504	28,225
Schoolcraft	0	0	1,935	43,442	0	60,380	0	3,691	25,206	73,423
Shiawassee	0	19,413	28,747	193,863	0	408,335	110,312	149,676	1,014	28,311
Tuscola	111,190	12,372	27,963	190,198	0	216,616	42,374	73,526	3,925	18,484
Van Buren	27,569	11,301	5,138	231,239	0	349,319	87,666	56,838	39,732	40,843
Washtenaw	26,866	224,116	335,915	660,062	165,379	2,533,765	1,063,960	335,782	211,548	400,335
Wayne	994,066	1,575,804	4,268,650	7,147,440	N.A.	19,098,733	5,638,984	1,586,506	1,181,523	2,291,244
Wexford	1,133	43,067	42,035	127,378	0	234,132	28,994	43,836	66,181	65,869
Out of state	513	1,920,755	11,046,934	3,388,184	170,237	20,057,780	9,387,516	1,815,592	3,165,054	4,588,102
Total	$6,403,476	$10,343,940	$25,492,151	$35,931,739	N.A.	$108,008,604	$36,938,892	$15,462,868	$11,713,828	$17,127,335

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-7. Sales and use tax collections by Michigan county by Business Classification Code, First Quarter 1986.

County	Watercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Motel Dining Rooms (BCC 584)	Family Rest- aurants (BCC 585)	Fast Food Rest- aurants (BCC 586)	Sport- ing Goods (BCC 595)	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 0	$ 0	$ 0	$ 12,300	$ 0	$ 5,359	$ 65	$ 1,107	$ 0	$ 32
Alger	0	0	0	14,911	263	8,864	275	276	3,097	10,359
Allegan	37,265	5,706	6,304	59,328	871	92,098	14,000	9,356	14,163	11,708
Alpena	0	1,855	9,400	26,855	0	72,888	39,770	13,074	6,058	7,181
Antrim	326	0	194	13,430	0	33,177	2,718	9,755	23,744	27,942
Arenac	8,421	1,056	0	17,516	0	15,295	14,072	1,227	444	2,403
Baraga	0	0	935	4,800	0	8,826	1,688	1,557	812	1,354
Barry	298	1,261	578	19,488	0	31,101	4,493	16,133	263	847
Bay	41,610	341	42,171	98,093	0	250,416	94,684	61,371	2,527	10,755
Benzie	5,867	1,529	2,521	3,070	0	36,738	408	2,105	3,071	4,784
Berrien	18,754	23,633	18,138	152,817	0	197,148	221,725	28,450	19,681	39,739
Branch	1,619	3,527	6,157	24,760	0	52,497	8,040	6,092	5,944	11,969
Calhoun	4,330	1,430	9,321	97,603	0	649,859	109,626	14,641	8,856	23,761
Cass	3,496	1,127	3,840	41,346	0	19,094	15,547	1,962	97	661
Charlevoix	1,587	64	3,070	15,562	0	27,145	5,455	3,093	93,564	44,402
Cheboygan	8,795	1,141	292	18,159	0	18,733	18,590	2,538	4,188	3,648
Chippewa	0	1,930	0	34,106	0	62,504	30,732	8,188	3,727	10,065
Clare	0	1,690	2,119	21,471	0	33,285	1,754	14,459	10,956	6,839
Clinton	0	0	4,609	34,832	0	40,338	22,197	337	0	2,400
Crawford	0	0	564	13,398	0	26,582	1,306	4,143	15,552	24,529
Delta	1,045	4,097	67,505	56,007	0	95,626	14,269	4,814	4,854	7,327
Dickinson	1,571	6,537	7,811	30,163	1,667	22,341	71,456	4,779	6,155	13,482
Eaton	0	5,395	15,261	43,715	0	155,895	45,167	20,516	30,537	22,909
Emmet	11,438	186	4,457	63,958	146	42,943	7,902	50,868	19,476	46,008
Genesee	16,488	69,057	107,845	367,511	0	1,144,881	373,885	226,942	41,888	74,469
Gladwin	1,068	0	2,524	13,551	0	31,269	1,155	4,181	2,391	1,997
Gogebic	0	610	221	23,201	0	24,344	3,278	12,661	40,312	29,573
Grand Traverse	15,279	15,186	13,959	73,768	0	268,972	71,083	38,179	51,541	96,498
Gratiot	0	2,732	27,139	23,712	0	39,454	21,279	1,598	399	9,940
Hillsdale	502	3,669	5,171	22,438	0	72,717	14,069	2,546	1,458	1,728
Houghton	29	1,883	1,111	37,974	0	20,056	21,133	8,513	11,127	15,388
Huron	9,629	2,239	3,849	28,529	0	50,668	11,810	2,482	10,714	4,109
Ingham	6,722	54,251	84,123	368,915	8,205	609,324	231,068	42,216	88,457	49,049
Ionia	0	962	1,489	25,431	0	33,986	23,130	3,052	4,638	3,316
Iosco	22	0	3,122	31,185	0	42,665	10,110	3,122	4,782	9,518
Iron	0	1,349	4,768	14,843	0	24,857	1,666	6,889	1,065	2,461
Isabella	0	3,895	14,583	45,695	0	104,124	59,297	11,360	22,621	24,811
Jackson	1,515	15,945	12,976	113,470	0	399,243	120,468	14,431	21,141	30,663
Kalamazoo	62,808	126,253	54,772	167,151	0	404,842	408,114	52,824	28,482	35,443
Kalkaska	255	0	284	5,303	3,514	33,435	0	1,580	4,264	2,144
Kent	24,221	78,393	641,054	389,017	0	1,446,249	345,231	160,262	216,600	198,092
Keweenaw	0	0	244	2,277	0	769	0	4,696	3,331	1,162
Lake	0	0	0	17,975	0	6,297	1,423	1,892	525	1,596
Lapeer	9,540	2,400	8,943	39,141	2,734	108,344	24,922	2,208	577	4,568

Leelanau	0	0	0	12,726	2,969	21,167	1,965	474	30,558	28,713
Lenawee	0	6,597	6,962	72,962	0	158,348	35,590	16,337	5,577	5,278
Livingston	9,759	2,326	5,328	46,168	0	107,269	110,255	21,206	336	13,535
Luce	0	0	0	4,526	0	6,846	2,137	1,406	743	1,065
Mackinac	393	0	0	9,742	0	17,902	5,831	5,340	1,702	3,888
Macomb	563,838	110,345	60,272	789,218	0	1,668,559	342,233	157,791	44,022	118,385
Manistee	1,338	3,081	2,033	26,758	0	29,646	9,393	1,804	5,538	13,716
Marquette	2,123	533	16,338	71,188	0	140,828	30,131	24,200	17,681	15,736
Mason	54	5,154	4,146	26,208	0	40,503	14,427	5,480	2,227	4,498
Mecosta	2,715	4,105	1,445	32,186	0	33,907	31,943	16,947	7,359	8,958
Menominee	0	0	1,520	33,837	0	22,066	14,339	1,065	390	2,046
Midland	3,141	27,210	30,746	37,363	0	125,976	10,249	22,906	21,605	28,298
Missaukee	0	0	0	6,283	0	7,638	1,475	560	43	1,288
Monroe	29,820	7,021	10,327	88,479	0	94,859	28,113	33,828	15,438	29,079
Montcalm	809	0	4,590	40,807	0	71,890	3,905	5,548	3,067	288
Montmorency	2,305	140	0	8,200	0	11,778	3,101	384	1,235	3,347
Muskegon	26,854	22,117	8,169	126,726	0	241,037	77,733	39,222	4,696	6,870
Newaygo	13,416	8,836	8,856	18,245	0	43,037	4,048	4,963	792	469
Oakland	23,997	503,949	468,524	899,538	70,865	3,658,972	1,290,095	756,904	412,234	500,084
Oceana	287	0	0	17,637	0	17,646	1,537	2,878	158	565
Ogemaw	0	688	5,397	10,756	0	29,300	2,690	1,001	1,828	4,138
Ontonagon	0	1,593	0	15,845	0	9,945	1,481	2,307	1,746	17,040
Osceola	0	0	734	12,955	0	17,890	7,680	1,758	2,391	749
Oscoda	0	0	0	6,493	0	8,461	2,696	21	1,452	5,156
Otsego	0	557	4,260	13,802	0	47,840	9,148	5,299	14,250	29,335
Ottawa	26,014	31,269	15,871	71,998	0	302,615	51,021	53,217	43,297	24,235
Presque Isle	0	1,101	134	17,179	0	11,804	430	437	1,774	880
Roscommon	1,556	1,347	1,326	29,288	0	31,533	23,992	1,326	28,104	12,391
Saginaw	3,599	60,052	145,448	209,766	6,548	494,336	25,918	44,206	19,587	17,573
St. Clair	3,302	4,028	133,274	109,882	7,170	256,957	66,486	16,761	26,241	27,759
St. Joseph	4,411	4,113	12,443	74,719	857	116,515	28,124	6,289	5,857	2,703
Sanilac	5,292	0	4,275	25,429	0	34,018	6,834	1,034	7,283	2,456
Schoolcraft	0	0	274	10,134	0	5,964	0	604	3,958	8,387
Shiawassee	0	3,696	5,219	41,738	0	95,890	18,446	28,402	4	6,843
Tuscola	22,755	1,906	4,702	44,687	0	44,398	9,649	8,826	501	2,109
Van Buren	1,748	1,392	998	50,156	0	66,379	10,107	8,184	3,911	2,051
Washtenaw	4,423	43,888	65,333	154,789	38,149	598,462	260,557	58,847	48,420	89,062
Wayne	137,790	305,176	974,181	1,812,784	2,416	4,797,322	1,351,275	293,318	249,698	488,719
Wexford	0	7,222	7,972	26,498	0	40,844	6,514	8,345	23,536	19,898
Out of state	0	370,470	2,280,889	43,384	42,294	4,895,789	2,145,439	469,071	747,960	1,179,587
Total	$1,186,239	$1,981,241	$5,485,410	$7,879,854	$188,668	$25,291,384	$8,536,047	$3,010,971	$2,641,278	$3,658,806

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-8. Sales and use tax collections by Michigan county by Business Classification Code, Second Quarter 1986.

County	Watercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Hotel Dining Rooms (BCC 584)	Family Rest- aurants (BCC 585)	Fast Food Rest- aurants (BCC 586)	Sport- ing Goods (BCC 595)	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 3,337	$ 0	$ 0	$ 19,575	$ 0	$ 12,871	$ 2,094	$ 2,307	$ 495	$ 1,270
Alger	0	0	0	17,911	349	11,358	353	2,109	2,696	14,466
Allegan	138,644	7,158	9,135	91,836	5,376	140,180	25,289	15,808	19,331	31,745
Alpena	934	3,659	10,403	29,561	849	92,924	53,873	23,984	8,355	10,466
Antrim	7,209	0	1,039	19,977	0	38,229	3,015	10,061	41,244	21,251
Arenac	34,670	1,252	0	22,338	0	31,516	22,019	3,623	847	4,022
Baraga	0	0	1,456	6,739	0	9,389	6,693	1,279	1,392	2,134
Barry	1,712	1,547	860	20,136	0	43,994	20,394	15,418	1,391	965
Bay	73,063	949	45,534	106,225	0	295,169	119,306	119,407	4,637	11,199
Benzie	18,582	1,844	3,465	7,595	0	43,276	1,147	5,732	5,510	7,802
Berrien	79,184	32,249	23,439	179,154	0	281,938	294,657	54,801	34,187	56,875
Branch	27,303	4,077	8,641	28,557	0	70,032	19,763	20,210	8,418	14,931
Calhoun	15,125	1,351	8,208	104,302	0	782,730	127,833	32,753	11,086	32,589
Cass	18,191	1,514	4,697	54,863	0	20,461	30,965	5,112	159	2,457
Charlevoix	38,405	211	6,423	25,399	0	33,531	13,039	4,602	30,818	25,136
Cheboygan	25,546	2,173	1,068	22,527	0	37,867	30,543	9,831	6,091	8,585
Chippewa	50	1,758	0	42,187	0	101,056	35,730	11,049	10,744	23,814
Clare	0	2,054	2,485	24,711	0	47,382	5,907	19,594	12,861	9,525
Clinton	0	0	4,441	34,670	0	49,969	24,055	439	1	2,890
Crawford	1,530	0	1,271	17,668	0	36,736	5,419	3,998	22,003	31,255
Delta	5,247	2,688	74,785	60,533	0	120,490	22,350	12,338	5,753	18,418
Dickinson	4,355	10,939	9,129	30,440	775	27,870	94,396	5,567	6,241	12,941
Eaton	0	7,641	23,134	40,952	0	183,103	65,963	56,760	35,728	26,903
Emmet	63,488	1,115	13,547	75,096	588	84,884	23,159	25,576	16,254	69,712
Genesee	56,730	88,009	120,852	369,748	0	1,331,495	450,982	443,207	49,703	87,922
Gladwin	13,176	0	3,708	18,506	0	49,374	2,881	7,040	2,603	2,455
Gogebic	0	837	474	22,050	0	25,726	5,991	1,379	7,533	13,108
Grand Traverse	46,022	19,647	17,414	83,400	0	354,010	95,973	72,351	96,064	193,077
Gratiot	0	3,812	59,219	24,103	0	47,605	27,887	4,531	1,410	15,378
Hillsdale	1,396	3,108	6,195	24,592	0	94,074	22,458	5,697	1,717	2,261
Houghton	161	1,958	1,558	38,998	0	25,182	24,729	13,892	20,346	17,546
Huron	52,216	3,786	5,059	34,652	0	75,264	21,907	7,439	15,408	7,553
Ingham	40,270	67,905	89,072	384,289	8,164	720,733	256,265	74,015	108,899	49,659
Ionia	0	1,392	3,132	28,424	0	43,177	35,876	6,755	7,629	5,055
Iosco	4,816	0	4,917	37,585	0	67,562	17,525	7,299	10,910	20,781
Iron	0	1,422	5,799	13,709	0	32,588	3,665	3,868	2,175	3,500
Isabella	0	9,428	14,802	50,502	0	135,060	92,658	16,396	25,337	28,861
Jackson	3,962	20,177	17,187	128,748	0	470,305	176,098	34,204	29,166	33,952
Kalamazoo	151,799	131,274	60,603	178,845	0	436,016	496,939	114,371	21,885	44,175
Kalkaska	13,205	0	390	7,014	3,478	40,311	1,881	3,917	4,597	3,403
Kent	80,376	96,515	671,583	399,868	0	1,631,999	439,975	326,556	230,914	239,711
Keweenaw	0	0	444	2,277	0	2,400	31	2,552	3,255	1,704
Lake	0	0	0	22,687	0	11,229	7,435	3,773	1,768	1,869
Lapeer	32,582	1,964	8,712	43,455	3,377	133,261	29,881	3,911	3,120	3,748

Leelanau	351	719	379	19,604	4,281	40,698	6,165	2,890	18,156	25,166
Lenawee	0	9,272	9,725	77,539	0	195,183	56,100	49,311	3,644	10,822
Livingston	51,531	3,739	7,172	52,061	0	124,065	147,451	39,572	2,903	88,503
Luce	486	0	0	4,034	0	11,302	3,060	2,690	1,584	3,252
Mackinac	1,938	218	976	30,416	0	59,340	10,911	17,531	167,626	64,025
Macomb	1,074,953	143,249	94,552	838,771	507	1,903,857	415,557	323,828	44,987	135,774
Manistee	7,048	3,765	2,672	37,541	0	39,730	15,646	5,531	11,922	19,569
Marquette	16,211	966	18,921	77,940	0	167,812	42,567	32,071	26,467	23,676
Mason	299	5,999	4,706	29,301	0	77,360	27,405	11,580	4,918	17,471
Mecosta	20,040	4,285	1,985	33,212	0	41,395	39,167	21,395	9,047	12,129
Menominee	0	0	2,105	38,267	0	31,590	20,273	2,028	841	3,688
Midland	24,257	27,687	31,958	39,818	0	137,847	13,533	33,000	21,672	31,379
Missaukee	0	0	0	10,523	0	9,129	3,901	1,322	396	2,160
Monroe	115,321	8,178	11,198	111,898	0	118,778	40,315	25,231	17,999	40,349
Montcalm	4,511	0	7,074	45,110	0	101,008	12,706	13,865	3,860	374
Montmorency	6,907	368	0	11,596	0	26,794	328	1,148	2,007	5,326
Muskegon	57,864	25,224	9,322	133,109	0	278,657	107,937	74,139	7,466	12,512
Newaygo	25,647	10,360	9,600	25,157	0	59,374	10,071	9,774	1,798	1,276
Oakland	135,966	580,114	534,068	965,825	79,077	4,123,519	1,660,491	1,003,677	512,020	616,147
Oceana	1,415	0	0	25,490	0	35,572	5,704	4,761	1,643	5,368
Ogemaw	0	1,015	7,052	11,899	0	41,784	6,676	2,584	3,983	4,835
Ontonagon	0	2,412	0	16,151	0	12,455	2,601	2,461	1,529	10,922
Osceola	0	0	1,060	17,713	0	23,900	11,092	747	2,843	883
Oscoda	0	0	0	7,136	0	13,169	5,464	451	1,557	1,776
Otsego	0	0	2,521	15,974	0	60,377	11,307	3,977	12,318	30,000
Ottawa	106,989	27,349	19,249	83,666	0	395,297	80,409	109,819	57,517	47,589
Presque Isle	0	1,451	101	18,624	0	19,702	468	1,488	3,483	1,843
Roscommon	18,383	2,593	2,711	33,359	0	49,333	35,865	4,339	35,857	15,381
Saginaw	18,811	72,261	158,468	217,941	6,778	632,457	34,126	49,720	24,719	28,609
St. Clair	19,984	9,313	163,280	138,115	7,859	333,582	83,545	39,987	41,067	39,578
St. Joseph	28,542	4,585	14,041	101,346	1,121	144,173	49,722	15,661	6,428	7,738
Sanilac	10,541	0	7,688	33,915	0	48,999	10,051	4,658	9,836	4,337
Schoolcraft	0	0	883	10,357	0	11,465	0	1,835	5,866	15,824
Shiawassee	0	707	6,476	43,479	0	116,314	24,946	45,456	3,687	7,386
Tuscola	67,350	2,619	6,056	46,983	0	50,368	15,804	24,374	1,876	1,710
Van Buren	13,146	2,169	2,059	59,006	0	89,731	34,485	26,620	11,358	9,135
Washtenaw	11,879	51,579	88,215	169,633	42,940	668,647	285,364	105,980	63,027	126,526
Wayne	758,186	400,107	1,177,913	1,913,636	3,236	5,089,865	1,718,785	491,397	340,082	618,496
Wexford	290	10,173	10,533	28,093	0	51,559	10,895	12,027	11,644	17,676
Out of state	1	515,235	2,832,363	172,343	37,949	5,428,721	2,436,748	588,758	871,358	1,439,809
Total	$3,652,133	$2,463,124	$6,591,362	$8,742,985	$206,704	$29,189,234	$10,756,640	$4,823,194	$3,301,672	$4,766,088

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-9. Sales and use tax collections by Michigan county by Business Classification Code, Third Quarter 1986.

County	Watercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Hotel Dining Rooms (BCC 584)	Family Rest- aurants (BCC 585)	Fast Food Rest- aurants (BCC 586)	Sport- ing Goods (BCC 595)	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 2,869	$ 0	$ 0	$ 29,765	$ 0	$ 20,726	$ 3,106	$ 5,545	$ 2,652	$ 6,685
Alger	0	0	0	24,372	440	28,320	82	2,885	6,874	36,490
Allegan	103,871	11,697	11,200	113,268	7,147	171,878	28,985	16,239	21,647	51,321
Alpena	1,406	1,410	12,066	27,960	1,718	106,927	56,628	20,202	17,652	17,004
Antrim	7,583	0	2,303	30,170	0	83,013	4,186	19,350	59,781	81,659
Arenac	28,740	1,483	0	24,771	0	41,497	28,606	5,546	1,019	6,336
Baraga	0	0	1,640	6,636	0	12,337	7,775	1,184	1,351	4,539
Barry	1,383	1,894	1,157	21,442	0	49,079	25,240	26,292	1,599	2,219
Bay	37,915	136	43,147	104,542	0	327,842	112,625	75,162	7,672	14,810
Benzie	17,768	4,359	5,441	11,874	0	84,165	2,187	11,814	12,121	26,724
Berrien	54,575	36,543	23,132	198,570	0	331,557	348,499	59,259	45,888	75,574
Branch	20,377	4,312	8,559	25,891	0	82,972	18,488	16,845	7,295	19,094
Calhoun	9,003	1,793	8,624	105,827	0	800,558	147,179	33,678	19,659	36,833
Cass	8,153	1,599	6,562	60,211	0	21,278	32,256	4,799	278	5,530
Charlevoix	48,010	0	13,607	36,693	0	90,451	21,702	10,666	63,906	63,404
Cheboygan	33,872	2,855	918	27,090	0	67,810	45,668	11,688	10,136	51,460
Chippewa	21	1,934	0	50,857	0	168,257	42,011	11,711	25,856	67,209
Clare	0	2,300	3,074	27,918	0	55,202	6,514	27,927	16,190	12,188
Clinton	0	0	5,090	36,102	0	54,484	24,138	672	0	3,316
Crawford	1,142	0	1,635	25,608	0	47,701	7,671	5,041	24,807	44,921
Delta	1,896	2,808	103,018	62,989	0	156,031	29,974	12,031	10,392	31,442
Dickinson	2,964	13,293	8,691	32,264	938	32,413	101,412	5,220	6,607	19,040
Eaton	0	6,570	19,535	38,987	0	182,294	62,301	53,881	26,848	24,421
Emmet	79,807	2,517	43,124	153,405	4,356	210,919	43,493	64,238	56,572	262,068
Genesee	31,921	77,237	115,104	360,298	0	1,301,555	460,152	434,385	50,922	104,688
Gladwin	11,549	0	3,429	23,403	0	56,966	3,405	8,349	2,678	3,067
Gogebic	0	976	469	24,733	0	35,922	6,429	2,310	10,536	25,607
Grand Traverse	39,696	28,064	22,801	117,379	0	498,243	122,864	98,700	188,185	492,142
Gratiot	0	2,930	59,806	25,708	0	46,887	26,489	5,998	532	19,165
Hillsdale	2,007	3,214	6,831	27,691	0	100,541	27,207	5,953	1,946	3,493
Houghton	60	0	2,002	44,835	0	38,446	29,201	13,463	28,505	35,557
Huron	35,271	4,239	4,941	40,113	0	100,144	23,881	9,066	23,702	15,041
Ingham	13,742	65,248	87,972	365,529	6,449	775,017	228,077	62,218	69,467	76,104
Ionia	0	1,545	1,433	28,869	0	42,764	36,289	4,858	9,058	5,526
Iosco	12,469	0	6,777	45,624	0	97,070	18,478	12,863	17,166	49,730
Iron	0	1,721	6,515	16,238	0	39,272	4,252	3,749	2,406	7,487
Isabella	0	6,919	14,776	49,044	0	154,790	105,782	16,440	24,422	32,053
Jackson	3,936	16,596	16,248	133,324	0	475,294	145,477	27,826	25,083	42,576
Kalamazoo	102,600	140,441	65,540	179,050	0	437,514	523,436	102,919	43,812	40,322
Kalkaska	10,239	0	286	9,424	3,946	52,698	1,720	5,301	4,807	5,895
Kent	46,080	101,070	689,473	402,771	0	1,666,633	449,636	236,222	210,929	251,374
Keweenaw	0	0	338	2,317	0	8,731	152	2,498	10,862	12,102
Lake	0	0	0	28,102	0	13,473	10,295	5,172	3,041	4,631
Lapeer	17,709	2,622	11,469	41,642	3,565	137,106	30,343	5,654	4,737	3,537

Leelanau	1,135	2,657	761	32,123	11,689	85,145	13,569	7,279	62,852	121,180
Lenawee	0	7,206	9,482	80,152	0	207,120	57,798	36,846	2,500	15,747
Livingston	23,060	3,753	6,372	60,827	0	130,999	150,249	32,609	1,081	26,797
Luce	3,634	0	0	5,742	0	19,994	4,117	3,464	3,064	9,120
Mackinac	3,422	1,771	3,587	66,685	0	145,880	34,463	16,140	455,021	205,451
Macomb	488,907	168,260	85,185	788,740	1,779	1,926,478	399,562	248,579	42,115	141,556
Manistee	3,574	4,554	1,298	48,727	0	57,131	23,218	9,443	24,453	51,346
Marquette	13,781	1,126	21,818	91,095	0	200,431	47,451	32,114	33,838	41,742
Mason	713	7,585	4,919	35,969	0	126,297	35,971	17,681	12,889	51,525
Mecosta	15,409	5,939	2,897	37,187	0	53,472	40,282	21,031	9,325	12,099
Menominee	0	0	1,794	32,974	0	36,082	21,314	2,132	1,706	5,776
Midland	9,748	26,781	34,413	40,386	0	135,033	13,822	29,877	20,394	36,481
Missaukee	0	0	0	13,792	0	13,068	5,401	2,131	984	3,762
Monroe	49,921	7,315	10,873	106,432	0	118,890	39,261	34,593	15,586	45,046
Montcalm	3,330	0	7,265	46,229	0	113,508	11,075	8,580	4,015	769
Montmorency	4,790	684	0	16,758	0	41,140	458	2,168	3,034	9,281
Muskegon	46,535	26,029	10,257	140,786	0	304,508	115,210	64,568	10,991	21,641
Newaygo	17,306	13,801	13,372	26,753	0	66,724	9,948	10,498	2,414	2,006
Oakland	62,476	512,956	548,210	945,580	48,116	4,171,292	1,763,033	1,118,117	457,354	633,011
Oceana	2,684	0	0	30,858	0	52,352	11,856	7,163	3,491	17,290
Ogemaw	0	1,624	7,850	22,580	0	54,126	7,768	3,569	6,031	7,713
Ontonagon	0	2,479	0	21,123	0	18,247	3,314	2,206	2,693	15,232
Osceola	0	0	1,206	19,632	0	26,531	11,772	1,379	2,890	1,215
Oscoda	0	0	0	9,169	0	19,189	7,875	723	2,659	3,046
Otsego	0	0	3,249	19,891	0	94,370	15,317	7,329	23,944	65,052
Ottawa	112,939	49,769	21,906	94,793	0	431,552	91,377	82,149	71,719	55,875
Presque Isle	0	2,099	159	22,334	0	30,433	925	2,097	4,804	4,831
Roscommon	12,989	3,125	3,803	37,695	0	86,208	49,020	8,458	55,649	44,471
Saginaw	11,897	59,406	173,527	216,828	5,864	738,812	39,868	67,577	35,230	49,967
St. Clair	23,750	8,171	170,439	149,042	9,269	389,287	102,483	36,519	49,885	50,762
St. Joseph	12,128	4,115	10,861	125,645	1,206	141,519	55,114	12,269	6,364	11,592
Sanilac	3,065	0	9,290	40,522	0	56,307	10,414	5,112	11,433	7,191
Schoolcraft	0	0	668	12,617	0	18,652	1,273	1,652	12,339	38,301
Shiawassee	0	425	6,866	40,451	0	117,984	24,539	41,970	4,810	8,194
Tuscola	21,208	3,334	5,864	48,175	0	53,566	13,081	18,159	1,698	3,305
Van Buren	10,812	2,983	3,661	77,414	0	106,991	36,606	16,238	18,154	26,482
Washtenaw	8,082	45,731	104,845	170,831	39,225	697,926	292,487	105,459	57,959	142,940
Wayne	306,979	375,296	1,065,495	1,846,345	3,045	4,859,254	1,701,339	404,207	329,817	667,377
Wexford	0	11,289	11,702	34,930	0	63,901	11,904	12,744	15,134	25,041
Out of state	0	507,847	2,982,076	693,634	32,432	5,925,094	2,515,495	602,367	885,385	1,412,258
Total	$2,062,908	$2,418,435	$6,784,703	$9,594,752	$181,184	$31,242,270	$11,244,320	$4,703,015	$3,945,302	$6,286,855

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-10. Sales and use tax collections by Michigan county by Business Classification Code, Fourth Quarter 1986.

County	Watercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Hotel Dining Rooms (BCC 584)	Family Rest- aurants (BCC 585)	Fast Food Rest- aurants (BCC 586)	Sport- ing Goods (BCC 595)	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 410	$ 0	$ 0	$ 20,175	$ 0	$ 13,254	$ 0	$ 3,319	$ 392	$ 1,183
Alger	0	0	0	16,884	245	10,600	135	3,273	1,302	12,341
Allegan	26,048	8,564	7,023	71,303	1,886	120,470	15,018	7,692	14,924	13,416
Alpena	174	3,430	13,068	31,734	603	100,217	51,281	25,675	7,201	8,367
Antrim	2,785	0	916	16,555	0	38,747	2,665	6,599	19,576	23,942
Arenac	7,204	2,009	0	18,817	0	21,508	21,009	3,031	257	3,497
Baraga	0	0	1,867	7,425	0	8,287	2,494	2,231	361	2,489
Barry	668	2,903	999	20,791	0	45,134	15,475	32,942	548	1,145
Bay	58,997	441	58,216	96,950	0	318,268	108,662	62,519	5,682	8,641
Benzie	6,187	2,419	3,360	6,354	0	34,231	406	3,893	4,730	9,148
Berrien	30,583	47,987	25,866	165,774	0	264,069	308,054	49,312	37,958	37,253
Branch	7,128	6,942	8,886	26,240	0	74,242	10,261	9,667	7,485	11,434
Calhoun	3,117	2,542	10,290	104,000	0	786,064	121,397	25,677	16,790	18,873
Cass	3,375	2,419	3,967	46,073	0	19,014	37,693	3,259	0	1,155
Charlevoix	13,558	0	5,604	19,208	0	36,510	4,395	8,455	53,156	24,461
Cheboygan	31,484	3,414	286	19,274	0	28,320	23,655	5,988	4,174	5,866
Chippewa	0	2,483	0	42,404	0	78,920	34,883	13,077	7,772	13,734
Clare	0	3,189	2,748	26,643	0	39,513	2,442	43,109	13,437	6,814
Clinton	0	0	5,531	35,270	0	47,248	24,024	394	431	1,993
Crawford	0	0	1,325	18,762	0	30,372	3,395	4,804	18,460	24,766
Delta	1,628	8,694	122,687	60,751	0	106,359	24,885	12,910	9,349	17,942
Dickinson	3,010	18,701	11,531	32,225	1,362	23,677	85,325	7,396	6,987	14,292
Eaton	0	12,054	24,747	39,343	0	178,861	60,371	37,174	39,860	33,003
Emmet	68,127	1,613	13,396	75,021	928	57,965	16,223	59,555	18,817	46,137
Genesee	15,562	120,103	140,621	399,438	0	1,276,383	404,516	351,051	41,057	68,894
Gladwin	3,126	0	3,302	16,409	0	43,455	2,365	8,155	2,532	2,414
Gogebic	0	1,849	516	22,223	0	23,450	8,288	8,121	15,207	19,213
Grand Traverse	10,128	29,270	19,288	76,666	0	338,493	88,504	75,920	90,171	153,067
Gratiot	0	5,546	99,779	26,785	0	50,078	26,074	3,320	376	13,542
Hillsdale	631	4,841	7,285	26,315	0	83,900	22,669	4,761	2,947	2,697
Houghton	69	0	1,583	42,414	0	26,141	24,857	16,497	15,068	17,731
Huron	8,301	6,234	7,347	32,363	0	61,369	15,268	5,016	14,093	5,205
Ingham	4,669	114,316	110,556	408,582	6,570	713,876	217,895	53,698	93,828	43,482
Ionia	0	3,269	1,468	27,673	0	35,488	31,489	3,828	4,677	3,343
Iosco	1,308	0	5,130	38,038	0	52,966	17,354	5,542	7,630	15,108
Iron	0	3,194	5,137	17,811	0	28,095	2,200	5,367	1,403	3,863
Isabella	0	7,758	17,879	50,406	0	134,956	113,774	19,103	24,536	23,277
Jackson	1,739	30,571	3,611	122,744	0	459,533	99,809	31,979	23,982	29,132
Kalamazoo	19,125	211,783	65,895	190,104	0	436,261	516,317	79,116	40,791	30,453
Kalkaska	910	0	283	5,626	3,598	31,317	1,488	5,218	2,751	3,363
Kent	35,943	157,241	903,309	429,827	0	1,644,114	421,734	188,856	288,163	230,954
Keweenaw	0	0	396	1,624	0	1,112	30	0	3,095	1,046
Lake	0	0	0	24,522	0	9,709	3,590	6,132	1,375	2,112
Lapeer	6,081	4,494	12,707	42,529	3,733	126,283	25,851	5,539	3,048	3,517

Leelanau	15	208	0	19,918	4,041	30,928	2,669	1,848	18,098	24,776
Lenawee	0	13,093	13,127	71,505	0	191,756	39,309	25,148	2,953	11,598
Livingston	6,640	7,315	4,562	57,814	0	109,146	132,405	29,508	1,148	25,982
Luce	59	0	0	5,383	0	10,362	2,587	3,483	1,300	1,573
Mackinac	499	0	333	19,398	0	43,994	9,889	10,713	67,314	19,195
Macomb	529,797	297,964	85,697	808,512	1,933	1,899,011	369,209	194,095	47,271	121,614
Manistee	1,371	6,666	307	36,943	0	37,767	13,101	5,461	7,180	20,166
Marquette	4,225	2,317	22,233	84,749	0	174,055	34,177	38,663	26,307	18,459
Mason	71	9,235	3,722	28,800	0	64,865	18,227	11,608	3,993	9,110
Mecosta	3,445	6,647	2,682	37,611	0	47,057	37,036	25,815	9,787	8,817
Menominee	0	0	2,607	30,365	0	29,360	17,522	1,043	1,532	3,218
Midland	5,355	43,502	35,778	41,553	0	135,583	11,717	30,995	26,810	35,266
Missaukee	0	0	0	9,626	0	7,829	2,690	1,415	247	2,027
Monroe	15,103	10,616	13,777	93,833	0	121,139	30,202	43,671	16,125	30,452
Montcalm	1,509	0	7,988	44,709	0	95,057	2,475	8,090	1,597	449
Montmorency	3,052	371	0	16,298	0	23,303	0	2,835	1,935	4,012
Muskegon	25,769	46,902	9,756	133,799	0	272,736	95,069	31,391	4,592	8,158
Newaygo	5,321	16,993	14,191	24,427	0	51,247	5,238	10,710	501	1,037
Oakland	76,107	830,329	675,561	1,044,198	62,163	4,164,566	1,617,402	1,536,745	510,265	551,234
Oceana	1,757	0	0	23,811	0	28,274	1,741	4,020	32	2,451
Ogemaw	0	1,890	5,860	19,490	0	40,823	3,198	3,092	3,118	4,813
Ontonagon	0	2,984	0	18,237	0	11,732	1,433	4,350	2,046	11,802
Osceola	0	0	1,246	20,613	0	23,750	7,863	3,946	5,451	1,290
Oscoda	0	0	0	8,672	0	12,288	4,688	1,896	1,199	1,999
Otsego	0	0	2,748	17,832	0	54,167	11,968	9,162	11,406	27,651
Ottawa	90,256	43,419	21,065	79,914	0	330,565	65,420	66,579	41,637	22,973
Presque Isle	0	2,940	104	21,661	0	17,046	565	1,508	1,350	3,042
Roscommon	1,444	4,194	2,627	28,549	0	45,636	28,490	2,870	32,035	10,368
Saginaw	4,016	112,923	211,973	223,975	0	737,766	31,722	96,885	32,077	34,822
St. Clair	3,256	16,794	204,793	121,759	10,160	297,272	81,536	33,405	38,118	32,372
St. Joseph	8,648	6,536	9,752	102,210	1,005	102,335	57,127	8,640	4,908	2,657
Sanilac	7,484	0	5,171	32,323	0	41,009	7,789	2,122	9,319	3,530
Schoolcraft	0	0	425	11,308	0	9,171	595	1,517	7,450	12,462
Shiawassee	0	498	6,877	42,413	0	111,789	21,233	47,473	2,397	7,804
Tuscola	19,097	5,974	6,617	46,626	0	46,303	11,026	8,235	763	2,542
Van Buren	4,506	2,297	1,336	58,993	0	75,227	15,822	10,979	2,577	2,775
Washtenaw	729	77,612	121,385	175,519	51,040	699,704	350,562	128,752	69,019	114,747
Wayne	137,377	605,867	1,482,021	1,968,216	643	5,019,571	1,599,683	372,711	384,642	566,078
Wexford	105	13,084	11,227	33,457	0	46,909	8,941	17,557	19,331	13,981
Out of state	8,598	735,733	3,620,881	143,538	34,878	5,794,301	2,393,601	758,246	1,029,150	1,233,905
Total	$1,337,686	$3,755,176	$8,336,834	$8,828,632	$184,788	$29,114,228	$10,164,147	$4,906,352	$3,413,359	$4,025,512

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-11. Sales and use tax collections by Michigan county by Business Classification Code, totals for 1986.

County	Watercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Hotel Dining Rooms (BCC 584)	Family Rest-aurants (BCC 585)	Fast Food Rest-aurants (BCC 586)	Sport-ing Goods (BCC 595)	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 6,616	$ 0	$ 0	$ 81,815	$ 0	$ 52,210	$ 5,265	$ 12,278	$ 3,539	$ 9,170
Alger	0	0	0	74,078	1,297	59,142	845	8,543	13,969	73,656
Allegan	305,828	33,125	33,662	335,735	15,280	524,626	83,292	49,095	70,065	108,190
Alpena	2,514	10,354	44,937	116,110	3,170	372,956	201,552	82,935	39,266	43,018
Antrim	17,903	0	4,452	80,132	0	193,166	12,584	45,765	144,345	154,794
Arenac	79,035	5,800	0	83,442	0	109,816	85,706	13,427	2,567	16,258
Baraga	0	0	5,898	25,600	0	38,839	18,650	6,251	3,916	10,516
Barry	4,061	7,605	3,594	81,857	0	169,308	65,602	90,785	3,801	5,176
Bay	211,585	1,867	189,068	405,810	0	1,191,695	435,277	318,459	20,518	45,405
Benzie	48,404	10,151	14,787	28,893	0	198,410	4,148	23,544	25,432	48,458
Berrien	183,096	140,412	90,575	696,315	0	1,074,712	1,172,935	191,822	137,714	209,441
Branch	56,427	18,858	32,243	105,448	0	279,743	56,552	52,814	29,142	57,428
Calhoun	31,575	7,116	36,443	411,732	0	3,019,211	506,035	106,749	56,391	112,056
Cass	33,215	6,659	19,066	202,493	0	79,847	116,461	15,132	534	9,803
Charlevoix	101,560	275	28,704	96,862	0	187,637	44,591	26,816	241,444	157,403
Cheboygan	99,697	9,583	2,564	87,050	0	152,730	118,456	30,045	24,589	69,559
Chippewa	71	8,105	0	169,554	0	410,737	143,356	44,025	48,099	114,822
Clare	0	9,233	10,426	100,743	0	175,382	16,617	105,089	53,444	35,366
Clinton	0	0	19,671	140,874	0	192,039	94,414	1,842	432	10,599
Crawford	2,672	0	4,795	75,436	0	141,391	17,791	17,986	80,822	125,471
Delta	9,816	18,287	367,995	240,280	0	478,506	91,478	42,093	30,348	75,129
Dickinson	11,900	49,470	37,162	125,092	4,742	106,301	352,589	22,962	25,990	59,755
Eaton	0	31,660	82,677	162,997	0	700,153	233,802	168,331	132,973	107,236
Emmet	222,860	5,431	74,524	367,480	6,018	396,711	90,777	200,237	111,119	423,925
Genesee	120,701	354,406	484,422	1,496,995	0	5,054,314	1,689,535	1,455,585	183,570	335,973
Gladwin	28,919	0	12,963	71,869	0	181,064	9,806	27,725	10,204	9,933
Gogebic	0	4,272	1,680	92,207	0	109,442	23,986	24,471	73,588	87,501
Grand Traverse	111,125	92,167	73,462	351,213	0	1,459,718	378,424	285,150	425,961	934,784
Gratiot	0	15,020	245,943	100,308	0	184,024	101,729	15,447	2,717	58,025
Hillsdale	4,536	14,832	25,482	101,036	0	351,232	86,403	18,957	8,068	10,179
Houghton	319	3,841	6,254	164,221	0	109,825	99,920	52,365	75,046	86,222
Huron	105,417	16,498	21,196	135,657	0	287,445	72,866	24,003	63,917	31,908
Ingham	65,403	301,720	371,723	1,527,315	29,388	2,818,950	933,305	232,147	360,651	218,294
Ionia	0	7,168	7,522	110,397	0	155,415	126,784	18,493	26,002	17,240
Iosco	18,615	0	19,946	152,432	0	260,263	63,467	28,826	40,488	95,137
Iron	0	7,686	22,219	62,601	0	124,812	11,783	19,873	7,049	17,311
Isabella	0	28,000	62,040	195,647	0	528,930	371,511	63,299	96,916	109,002
Jackson	11,152	83,289	50,022	498,286	0	1,804,375	541,852	108,440	99,372	136,323
Kalamazoo	336,332	609,751	246,810	715,150	0	1,714,633	1,944,806	349,230	134,970	150,393
Kalkaska	24,609	0	1,243	27,367	14,536	157,761	5,089	16,016	16,419	14,805
Kent	186,620	433,219	2,905,419	1,621,483	0	6,388,995	1,656,576	911,896	946,606	920,131
Keweenaw	0	0	1,422	8,495	0	13,012	213	9,746	20,543	16,014
Lake	0	0	0	93,286	0	40,708	22,743	16,969	6,709	10,208
Lapeer	65,912	11,480	41,831	166,767	13,409	504,994	110,997	17,312	11,482	15,370

Leelanau	1,501	3,584	1,140	84,371	22,980	177,938	24,368	12,491	129,664	199,835
Lenawee	0	36,168	39,296	302,158	0	752,407	188,797	127,642	14,674	43,445
Livingston	90,990	17,133	23,434	216,870	0	471,479	540,360	122,895	5,468	154,817
Luce	4,179	0	0	19,685	0	48,504	11,901	11,043	6,691	15,010
Mackinac	6,252	1,989	4,896	126,241	0	267,116	61,094	49,724	691,663	292,559
Macomb	2,657,495	719,818	325,706	3,225,241	4,219	7,397,905	1,526,561	924,293	178,395	517,329
Manistee	13,331	18,066	6,310	149,969	0	164,274	61,358	22,239	49,093	104,797
Marquette	36,340	4,942	79,310	324,972	0	683,126	154,326	127,048	104,293	99,613
Mason	1,137	27,973	17,493	120,278	0	309,025	96,030	46,349	24,027	82,604
Mecosta	41,609	20,976	9,009	140,196	0	175,831	148,428	85,188	35,518	42,003
Menominee	0	0	8,026	135,443	0	119,098	73,448	6,268	4,469	14,728
Midland	42,501	125,180	132,895	159,120	0	534,439	49,321	116,778	90,481	131,424
Missaukee	0	0	0	40,224	0	37,664	13,467	5,428	1,670	9,237
Monroe	210,165	33,130	46,175	400,642	0	453,666	137,891	137,323	65,148	144,926
Montcalm	10,159	0	26,917	176,855	0	381,463	30,161	36,083	12,539	1,880
Montmorency	17,054	1,563	0	52,852	0	103,015	3,887	6,535	8,211	21,966
Muskegon	157,022	120,272	37,504	534,420	0	1,096,938	395,949	209,320	27,745	49,181
Newaygo	61,690	49,990	46,019	94,582	0	220,382	29,305	35,945	5,505	4,788
Oakland	298,546	2,427,348	2,226,363	3,855,141	260,221	16,118,349	6,331,021	4,415,443	1,891,873	2,300,476
Oceana	6,143	0	0	97,796	0	133,844	20,838	18,822	5,324	25,674
Ogemaw	0	5,217	26,159	64,725	0	166,033	20,332	10,246	14,960	21,499
Ontonagon	0	9,468	0	71,356	0	52,379	8,829	11,324	8,014	54,996
Osceola	0	0	4,246	70,913	0	92,071	38,407	7,830	13,575	4,137
Oscoda	0	0	0	31,470	0	53,107	20,723	3,091	6,867	11,977
Otsego	0	557	12,778	67,499	0	256,754	47,740	25,767	61,918	152,038
Ottawa	336,198	151,806	78,091	330,371	0	1,460,029	288,227	311,764	214,170	150,672
Presque Isle	0	7,591	498	79,798	0	78,985	2,388	5,530	11,411	10,596
Roscommon	34,372	11,259	10,467	128,891	0	212,710	137,367	16,993	151,645	82,611
Saginaw	38,323	304,642	689,416	868,510	19,190	2,603,371	131,634	258,388	111,613	130,971
St. Clair	50,292	38,306	671,786	518,798	34,458	1,277,098	334,050	126,672	155,311	150,471
St. Joseph	53,729	19,349	47,097	403,920	4,189	504,542	190,087	42,859	23,557	24,690
Sanilac	26,382	0	26,424	132,189	0	180,333	35,088	12,926	37,871	17,514
Schoolcraft	0	0	2,250	44,416	0	45,252	1,868	5,608	29,613	74,974
Shiawassee	0	5,326	25,438	168,081	0	441,977	89,164	163,301	10,898	30,227
Tuscola	130,410	13,833	23,239	186,471	0	194,635	49,560	59,594	4,838	9,666
Van Buren	30,212	8,841	8,054	245,569	0	338,328	97,020	62,021	36,000	40,443
Washtenaw	25,113	218,810	379,778	670,772	171,354	2,664,739	1,188,970	399,038	238,425	473,275
Wayne	1,340,332	1,686,446	4,699,610	7,540,981	9,340	19,766,012	6,371,082	1,561,633	1,304,239	2,340,670
Wexford	395	41,768	41,434	122,978	0	203,213	38,254	50,673	69,645	76,596
Out of state	8,599	2,129,285	11,716,209	1,052,899	147,553	22,043,905	9,491,283	2,418,442	3,533,853	5,265,559
Total	$8,238,966	$10,617,976	$27,198,309	$35,046,223	$761,344	$114,837,116	$40,701,154	$17,443,532	$13,301,611	$18,737,261

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-12. Sales and use tax collections by Michigan county by Business Classification Code, First Quarter 1987.

County	Watercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Hotel Dining Rooms (BCC 584)	Family Rest-aurants (BCC 585)	Fast Food Rest-aurants (BCC 586)	Sporting Goods (BCC 59[illegible])	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 0	$ 0	$ 0	$ 12,294	$ 0	$ 6,604	$ 0	$ 1,313	$ 47	$ 326
Alger	0	0	0	18,200	255	9,886	0	2,425	1,132	14,761
Allegan	33,888	8,251	4,829	70,249	130	95,652	19,239	11,065	14,378	11,211
Alpena	0	1,171	9,406	28,301	0	83,725	38,242	15,593	4,651	8,263
Antrim	2,259	0	268	12,523	0	40,536	2,494	8,255	19,570	27,809
Arenac	7,210	701	0	16,253	0	16,241	15,384	589	407	2,374
Baraga	0	0	1,079	6,124	0	7,253	4,216	1,145	806	1,405
Barry	694	1,244	817	20,012	0	41,862	16,313	18,273	0	1,212
Bay	28,920	175	40,689	93,988	0	303,214	98,404	58,386	5,302	10,068
Benzie	4,047	2,067	2,447	4,361	0	34,680	309	1,858	2,982	5,316
Berrien	25,999	27,068	19,745	163,660	0	219,700	295,190	36,174	25,252	40,286
Branch	1,949	3,416	8,136	24,108	0	66,063	10,686	6,549	6,712	12,625
Calhoun	5,765	1,262	6,682	105,857	0	697,142	133,395	17,219	23,622	9,708
Cass	1,925	1,351	2,485	41,621	0	22,465	12,267	2,890	146	717
Charlevoix	6,692	0	3,407	17,484	0	31,162	6,424	6,323	123,696	53,584
Cheboygan	15,288	1,359	120	18,909	0	20,840	20,032	2,678	3,886	2,900
Chippewa	0	1,416	0	40,240	253	72,090	32,906	9,253	4,206	16,558
Clare	1	2,024	4,163	23,941	0	35,232	1,745	17,220	11,141	5,438
Clinton	0	0	4,139	34,178	0	42,115	22,424	307	400	1,914
Crawford	0	0	669	15,775	0	25,243	2,583	4,422	16,161	27,320
Delta	807	2,428	82,962	52,485	0	97,751	25,078	8,206	8,598	16,307
Dickinson	2,295	8,354	7,612	31,831	1,773	20,050	75,965	4,106	5,572	11,870
Eaton	0	5,296	17,069	35,416	0	134,182	55,990	23,311	23,360	27,244
Emmet	14,533	224	5,771	66,918	7,261	46,743	16,058	45,267	25,938	43,207
Genesee	21,144	67,791	86,040	374,328	0	1,135,593	327,128	255,261	32,843	61,889
Gladwin	3,701	0	1,867	13,019	0	29,784	2,140	7,628	1,549	1,325
Gogebic	0	807	301	26,044	0	18,203	11,229	16,323	38,212	31,312
Grand Traverse	18,889	18,028	15,120	81,590	0	293,237	104,862	49,063	67,298	117,912
Gratiot	0	2,973	61,899	27,267	0	74,223	22,501	1,956	2,835	11,572
Hillsdale	480	2,061	6,722	25,516	0	73,769	20,547	3,306	1,393	2,605
Houghton	0	0	1,356	44,311	3,489	22,160	23,651	10,680	9,239	17,669
Huron	10,388	2,918	2,274	30,042	0	53,777	13,166	2,472	11,614	3,762
Ingham	7,989	54,299	90,128	392,017	6,847	685,721	196,396	45,126	109,016	36,226
Ionia	0	1,646	1,044	26,212	0	34,765	28,974	2,319	4,211	3,374
Iosco	1,618	0	3,362	32,069	0	52,090	16,202	3,217	4,393	9,225
Iron	0	1,280	4,239	15,385	0	23,236	1,760	8,070	1,110	2,602
Isabella	0	4,233	13,352	55,066	0	120,775	99,386	12,035	22,529	27,329
Jackson	2,061	16,543	2,316	120,335	531	424,985	72,319	21,984	17,856	32,480
Kalamazoo	15,813	138,590	54,353	165,950	0	401,024	503,296	66,554	37,220	35,637
Kalkaska	709	0	272	8,851	0	31,735	1,429	1,726	1,979	3,499
Kent	57,103	96,534	551,969	414,048	0	1,519,914	308,472	135,650	242,530	194,411
Keweenaw	0	0	242	2,062	0	1,257	0	0	4,561	721
Lake	0	0	0	18,660	0	5,423	2,181	2,290	1,081	1,258
Lapeer	7,681	2,091	9,138	37,186	3,570	126,759	15,921	2,828	3,792	1,879

Leelanau	0	0	0	16,964	3,209	23,356	1,903	864	28,253	31,703
Lenawee	0	6,501	8,897	72,367	0	168,610	36,544	22,656	3,602	9,742
Livingston	12,173	2,952	6,554	56,692	0	171,493	125,840	22,371	1,554	21,788
Luce	0	0	0	5,462	0	8,843	2,124	1,617	649	881
Mackinac	983	0	0	10,405	0	20,697	6,152	6,032	2,179	4,152
Macomb	342,671	167,610	54,659	777,907	2,896	1,828,354	355,301	193,410	63,959	88,803
Manistee	1,314	3,234	1,115	29,857	0	28,325	11,267	2,231	4,644	13,443
Marquette	3,835	1,174	15,005	81,412	0	154,466	35,974	24,871	20,910	16,967
Mason	1,103	5,713	3,416	23,224	0	43,577	8,083	6,387	3,076	4,868
Mecosta	3,885	4,191	1,455	34,915	0	50,926	32,630	17,658	9,421	10,477
Menominee	0	0	1,918	30,768	0	26,664	16,799	851	289	2,222
Midland	1,670	23,819	23,309	40,454	0	132,980	13,591	21,957	22,177	31,602
Missaukee	140	0	0	6,636	0	7,148	1,765	760	20	1,373
Monroe	19,434	6,343	11,469	86,766	0	115,250	40,023	31,470	15,987	28,495
Montcalm	1,013	0	4,826	38,886	0	86,583	4,296	5,926	2,510	568
Montmorency	3,562	128	0	11,788	0	15,364	0	650	1,621	3,370
Muskegon	88,968	17,818	9,945	127,409	0	246,550	86,672	50,095	3,816	4,893
Newaygo	11,868	9,293	7,326	17,591	0	41,383	6,688	4,333	134	271
Oakland	48,072	471,067	489,496	1,010,710	74,496	3,825,814	1,507,451	824,089	279,550	433,463
Oceana	732	0	0	20,317	0	21,554	1,358	3,227	26	1,716
Ogemaw	0	716	5,706	14,427	0	30,496	3,764	1,337	1,871	3,420
Ontonagon	0	1,467	431	15,520	0	12,325	1,264	1,993	1,945	11,529
Osceola	0	0	794	14,935	0	19,661	7,490	1,620	3,298	707
Oscoda	0	0	0	6,781	0	9,416	2,892	352	1,100	980
Otsego	0	0	1,574	22,378	0	52,595	10,392	6,235	10,015	30,179
Ottawa	20,399	33,948	17,412	77,874	0	280,466	61,718	72,957	39,057	19,042
Presque Isle	0	1,417	688	18,679	0	11,718	484	403	2,038	836
Roscommon	2,289	1,593	1,233	26,016	0	39,741	25,886	2,165	10,304	9,662
Saginaw	7,898	65,159	130,626	213,186	1,373	575,053	28,684	55,985	22,464	18,073
St. Clair	3,778	8,482	133,025	116,543	8,878	283,991	75,730	16,778	33,141	29,242
St. Joseph	10,247	3,974	6,750	88,741	1,081	82,261	66,341	7,605	20,129	2,272
Sanilac	7,722	0	4,184	27,906	0	37,351	10,524	1,117	5,254	2,500
Schoolcraft	0	0	250	10,339	0	6,319	498	497	4,165	6,761
Shiawassee	0	0	4,665	41,060	0	100,578	20,275	28,654	2,782	8,005
Tuscola	19,999	2,524	4,183	45,589	0	42,709	13,814	7,509	518	2,307
Van Buren	6,093	1,990	944	50,624	0	66,937	30,781	10,388	0	4,030
Washtenaw	931	44,159	78,331	177,428	40,576	730,176	321,177	72,678	53,623	99,892
Wayne	190,559	327,178	938,730	1,865,489	12,173	4,872,208	1,522,161	243,464	326,830	520,461
Wexford	0	7,491	8,663	30,433	0	42,717	8,120	14,210	13,124	15,628
Out of state	16	426,459	2,473,725	537,977	37,818	5,061,322	2,413,201	757,153	1,189,870	1,257,478
Total	$1,111,202	$2,124,001	$5,579,793	$8,767,141	$206,609	$26,674,838	$9,596,561	$3,495,870	$3,149,131	$3,702,911

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-13. Sales and use tax collections by Michigan county by Business Classification Code, Second Quarter 1987.

County	Watercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Hotel Dining Rooms (BCC 584)	Family Rest- aurants (BCC 585)	Fast Food Rest- aurants (BCC 586)	Sport- ing Goods (BCC 595)	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 2,535	$ 0	$ 0	$ 18,047	$ 0	$ 14,372	$ 1,390	$ 2,672	$ 609	$ 1,915
Alger	0	0	0	19,190	0	10,792	0	2,712	5,033	16,802
Allegan	188,644	10,717	9,193	103,539	4,994	135,254	33,002	18,829	13,442	30,461
Alpena	1,478	1,384	8,759	31,795	716	100,783	96,729	25,384	6,773	12,213
Antrim	53,232	0	1,152	17,419	0	48,086	2,964	11,701	23,572	29,462
Arenac	45,666	1,194	0	22,392	0	31,460	24,127	882	553	4,341
Baraga	0	0	1,338	8,346	0	9,214	8,078	1,433	847	2,876
Barry	1,831	1,755	1,346	20,779	0	51,709	24,199	16,446	797	2,151
Bay	76,417	129	42,135	96,628	0	340,751	121,020	125,102	5,778	12,308
Benzie	10,536	2,045	3,443	9,000	0	44,630	625	6,455	5,343	8,208
Berrien	88,217	34,413	24,758	205,538	0	289,566	373,085	61,570	34,846	62,684
Branch	30,462	3,753	11,495	24,131	0	87,183	21,584	16,727	10,303	15,185
Calhoun	12,956	1,768	8,427	109,720	0	790,803	176,025	34,539	34,004	20,541
Cass	19,643	1,712	4,999	52,639	0	23,476	14,494	8,456	417	2,749
Charlevoix	46,929	0	6,072	22,532	0	47,850	15,699	7,700	35,615	32,807
Cheboygan	50,383	1,988	570	24,192	0	41,683	27,798	8,342	3,289	10,416
Chippewa	14	1,431	0	48,829	375	112,390	36,799	12,632	14,642	30,164
Clare	0	2,455	4,527	25,705	0	47,377	7,283	21,248	13,281	8,079
Clinton	0	0	4,531	37,487	0	53,633	23,790	423	1,351	1,406
Crawford	746	0	1,114	19,445	0	36,647	7,458	4,997	24,906	35,786
Delta	8,664	1,213	92,388	57,432	7,164	116,362	34,126	22,324	5,674	25,821
Dickinson	3,065	13,134	9,608	41,869	662	21,219	92,488	1,958	5,149	13,317
Eaton	0	6,818	24,515	37,394	0	153,584	81,092	55,920	25,106	25,638
Emmet	60,520	1,984	14,838	79,694	8,018	94,265	32,468	29,285	24,405	77,110
Genesee	51,021	76,292	92,060	360,171	0	1,269,003	394,861	501,655	34,416	78,985
Gladwin	29,262	0	3,189	19,130	0	54,054	4,920	9,713	2,474	2,638
Gogebic	0	1,126	480	21,847	0	18,233	14,985	2,505	7,958	14,217
Grand Traverse	70,321	23,275	19,111	84,397	0	383,293	136,032	101,029	110,531	231,248
Gratiot	0	3,810	79,949	26,669	0	94,648	30,226	4,750	497	18,285
Hillsdale	2,932	2,514	7,702	25,889	0	88,099	26,152	5,922	3,416	2,779
Houghton	104	0	0	45,505	6,154	32,412	27,108	14,554	14,581	17,762
Huron	49,813	4,597	3,297	33,524	0	76,685	22,256	11,606	17,289	7,982
Ingham	27,028	73,085	90,545	392,599	7,423	782,024	224,804	79,368	118,272	40,811
Ionia	0	0	1,307	26,790	0	41,399	37,561	7,030	9,466	4,022
Iosco	6,881	0	5,310	36,792	0	86,984	20,659	6,454	8,628	18,949
Iron	0	1,460	5,735	15,716	0	30,305	3,843	4,958	1,182	4,645
Isabella	0	4,895	14,073	54,246	0	145,567	106,712	17,704	25,261	40,698
Jackson	10,248	19,717	4,229	131,320	578	479,238	111,147	39,824	21,827	39,945
Kalamazoo	70,192	142,948	61,125	174,485	0	450,937	573,780	133,471	53,434	35,129
Kalkaska	15,063	0	244	9,481	0	44,595	1,880	5,568	1,614	4,707
Kent	138,834	99,906	588,083	386,046	0	1,625,070	395,616	319,570	274,756	249,412
Keweenaw	0	0	355	1,598	0	1,982	34	0	3,460	2,681
Lake	0	0	0	26,115	0	12,296	7,287	4,928	1,771	1,870
Lapeer	33,894	1,512	9,344	41,811	4,476	151,307	23,816	6,456	4,670	1,757

Leelanau	1,444	0	247	26,644	7,450	43,837	4,522	3,900	23,303	47,122
Lenawee	0	9,498	9,780	75,505	0	202,668	54,063	69,180	3,500	13,493
Livingston	77,099	3,035	7,689	67,763	0	204,155	164,208	43,220	993	30,448
Luce	954	0	0	4,713	0	13,437	2,937	2,657	1,170	3,746
Mackinac	2,488	323	0	31,427	0	68,209	15,643	22,367	207,999	62,806
Macomb	1,102,797	207,911	81,434	943,348	2,356	1,936,718	431,102	343,018	67,269	99,989
Manistee	6,957	5,108	873	37,336	0	38,105	17,075	5,781	4,793	27,755
Marquette	18,385	1,317	18,468	87,518	0	193,193	45,611	30,250	30,607	26,314
Mason	4,963	4,875	3,173	24,325	0	80,367	17,001	14,420	8,095	17,230
Mecosta	20,456	4,572	2,213	34,242	0	60,855	41,885	21,796	11,351	14,429
Menominee	704	0	3,102	31,858	0	33,969	21,188	2,082	638	4,984
Midland	21,290	25,385	22,508	40,045	0	147,153	17,606	29,744	24,287	42,857
Missaukee	2,971	0	0	11,580	0	9,736	4,719	1,979	600	2,056
Monroe	53,973	8,333	12,332	113,948	0	139,974	51,382	27,019	16,997	34,210
Montcalm	3,231	0	6,873	42,413	0	114,164	14,158	11,663	3,275	558
Montmorency	7,387	436	0	15,376	0	32,313	0	1,636	2,956	4,875
Muskegon	178,600	23,005	10,086	118,648	0	288,746	112,430	116,094	6,907	11,256
Newaygo	22,945	10,117	13,026	24,160	0	56,839	13,006	8,218	358	1,235
Oakland	299,521	600,455	540,219	1,027,030	79,633	4,090,822	1,885,533	1,069,401	402,670	465,362
Oceana	2,609	0	0	28,736	0	33,385	9,375	4,336	2,793	6,229
Ogemaw	0	947	7,274	16,543	0	43,209	11,491	2,862	2,793	5,233
Ontonagon	0	2,361	2,011	15,735	0	16,207	2,471	2,384	1,599	13,553
Osceola	894	0	934	20,107	0	25,303	11,912	1,060	3,095	1,093
Oscoda	0	0	0	7,722	0	13,475	5,922	2,095	1,450	1,734
Otsego	0	0	2,598	21,654	0	64,852	8,046	3,088	10,727	35,268
Ottawa	133,133	28,382	20,449	90,971	0	369,053	92,882	108,863	92,603	43,348
Presque Isle	0	2,056	1,093	19,174	0	20,972	673	466	3,742	1,728
Roscommon	6,707	3,453	2,748	30,440	0	55,035	37,768	5,900	13,557	15,864
Saginaw	19,029	63,663	144,849	209,560	2,203	679,087	47,012	44,096	28,507	36,650
St. Clair	18,797	4,897	160,419	141,207	9,388	355,611	97,899	41,078	45,229	38,752
St. Joseph	20,396	5,224	8,124	111,186	1,224	99,121	87,920	21,070	19,715	5,779
Sanilac	3,991	0	8,081	36,999	0	50,640	12,331	4,380	5,994	4,448
Schoolcraft	0	0	639	10,605	0	10,679	484	2,006	6,858	16,884
Shiawassee	0	331	6,525	44,601	0	119,218	29,094	43,291	2,502	8,519
Tuscola	84,843	3,792	5,688	46,619	0	51,498	16,958	32,551	807	3,487
Van Buren	24,639	1,685	1,293	71,736	0	96,100	47,948	23,924	6,017	16,889
Washtenaw	7,598	52,670	106,769	183,602	49,020	795,036	376,280	126,688	63,461	144,883
Wayne	811,300	419,186	1,175,327	1,916,382	12,760	4,886,911	1,915,600	480,061	384,172	614,354
Wexford	0	8,922	9,450	34,450	0	56,104	10,329	13,520	8,188	16,130
Out of state	9,636	550,614	3,190,268	2,869,577	33,046	5,473,995	2,931,402	681,470	1,327,063	1,342,038
Total	$4,177,268	$2,595,583	$6,847,908	$11,733,358	$237,640	$29,641,971	$12,087,868	$5,244,416	$3,859,878	$4,584,550

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-14. Sales and use tax collections by Michigan county by Business Classification Code, Third Quarter 1987.

County	Watercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Hotel Dining Rooms (BCC 584)	Family Rest- aurants (BCC 585)	Fast Food Rest- aurants (BCC 586)	Sport- ing Goods (BCC 595)	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 1,975	$ 0	$ 378	$ 24,600	$ 0	$ 24,949	$ 2,370	$ 5,468	$ 3,439	$ 13,451
Alger	0	0	0	26,412	0	32,698	107	3,177	15,677	33,709
Allegan	103,955	15,024	9,428	133,796	8,875	140,007	34,396	15,247	17,136	50,219
Alpena	1,981	1,679	9,215	32,922	1,438	116,358	148,461	23,992	7,623	20,006
Antrim	37,625	0	2,302	24,227	0	93,190	4,240	23,802	39,942	95,661
Arenac	23,148	1,307	0	27,969	0	30,381	32,676	1,948	1,663	5,430
Baraga	0	0	1,531	9,045	0	12,722	7,361	1,455	1,834	4,085
Barry	1,972	1,927	1,051	19,743	0	55,940	21,723	29,223	1,770	2,760
Bay	28,336	91	39,308	96,126	0	347,027	126,220	86,092	8,105	17,605
Benzie	13,568	4,698	6,328	14,718	0	93,871	963	12,640	13,568	28,379
Berrien	51,014	34,278	27,796	215,020	0	329,253	430,481	70,472	41,671	88,909
Branch	34,292	3,854	10,106	24,907	0	96,996	19,888	16,710	9,165	20,759
Calhoun	11,583	1,590	8,013	119,013	0	819,637	184,616	37,180	44,276	29,655
Cass	12,841	1,560	6,082	59,884	0	24,151	13,882	6,858	322	4,966
Charlevoix	56,858	0	12,834	54,358	0	96,407	29,607	12,901	78,347	83,167
Cheboygan	49,012	3,051	380	31,528	0	74,682	50,906	11,806	7,158	28,164
Chippewa	9	1,807	0	64,201	0	182,505	43,642	14,999	29,596	87,825
Clare	0	2,551	5,271	30,486	0	58,453	10,548	33,541	17,472	9,300
Clinton	0	0	4,893	36,661	0	59,490	29,557	1,106	1,134	1,629
Crawford	837	0	994	25,635	0	46,584	9,819	4,845	27,417	51,021
Delta	3,362	70	125,275	66,648	7,791	149,818	38,612	14,279	9,164	47,880
Dickinson	2,303	11,685	9,734	46,185	915	27,099	103,164	3,306	4,268	21,540
Eaton	0	5,502	20,268	37,410	0	143,480	88,716	57,416	27,798	31,346
Emmet	101,927	5,026	39,658	155,540	17,599	200,231	56,948	55,001	90,027	259,559
Genesee	29,615	58,358	86,509	366,217	0	1,223,988	400,663	477,524	35,093	89,595
Gladwin	16,514	0	3,033	23,800	0	63,699	4,894	11,575	2,624	3,134
Gogebic	0	0	444	24,841	0	23,241	17,304	2,645	14,003	24,883
Grand Traverse	49,211	32,033	27,458	120,632	0	525,364	192,012	119,553	186,200	530,938
Gratiot	0	3,128	82,753	26,829	0	100,540	31,679	5,441	832	19,438
Hillsdale	1,814	2,507	7,340	25,070	0	94,359	27,120	5,532	3,788	4,013
Houghton	51	0	0	50,301	10,197	50,440	29,065	13,737	16,699	35,728
Huron	37,812	4,491	2,814	37,850	0	102,143	26,124	14,450	26,895	17,859
Ingham	10,448	69,429	82,823	398,435	5,320	770,099	208,996	59,052	77,518	41,884
Ionia	0	0	1,278	28,242	0	42,408	41,631	6,002	9,829	5,368
Iosco	7,828	0	6,297	49,888	0	122,587	23,071	10,117	14,991	48,979
Iron	0	1,623	6,258	17,992	0	37,484	4,801	4,491	1,702	7,758
Isabella	0	4,610	11,459	55,402	0	183,298	108,867	18,436	22,719	49,664
Jackson	3,780	13,668	3,595	136,812	0	506,897	108,979	33,221	26,911	44,712
Kalamazoo	24,246	156,701	61,956	180,708	0	462,952	603,147	116,850	53,921	43,827
Kalkaska	7,728	0	200	13,370	0	56,050	3,042	5,625	1,340	6,507
Kent	115,074	100,058	613,372	397,462	0	1,715,811	405,583	247,445	238,069	240,804
Keweenaw	0	0	238	1,838	0	9,957	31	0	12,344	12,687
Lake	0	0	0	31,121	0	16,000	9,585	5,190	2,069	5,193
Lapeer	15,044	2,242	10,730	44,762	4,845	153,635	23,858	6,788	8,686	2,993

Leelanau	1,411	0	880	50,627	15,218	105,827	10,603	8,416	61,097	131,804
Lenawee	0	7,842	10,054	73,761	0	206,433	55,085	55,320	4,148	16,368
Livingston	30,764	3,250	7,391	74,645	0	217,000	176,760	31,527	2,892	38,012
Luce	4,572	0	0	5,847	0	23,328	4,910	2,671	4,399	11,129
Mackinac	4,720	2,186	7,057	61,279	0	156,180	38,531	19,246	566,785	195,822
Macomb	502,765	176,076	79,112	804,865	2,105	1,942,949	429,940	301,689	68,589	103,665
Manistee	5,177	6,986	652	52,506	0	47,611	21,200	10,411	17,102	56,326
Marquette	10,136	1,240	21,902	93,071	1,395	161,391	53,929	31,878	42,865	89,926
Mason	9,807	5,440	3,562	30,198	0	129,565	21,747	20,411	18,054	48,535
Mecosta	11,861	5,428	2,758	34,469	0	66,076	51,962	22,588	11,443	16,137
Menominee	1,621	0	2,837	31,210	0	48,588	21,997	2,517	2,451	6,147
Midland	13,610	27,401	24,266	39,682	0	151,848	17,698	28,592	21,827	49,547
Missaukee	4,709	0	0	17,799	0	11,979	5,563	2,393	1,226	3,871
Monroe	32,565	6,505	11,215	108,312	0	142,109	51,838	35,958	15,967	40,179
Montcalm	1,666	0	4,811	44,628	0	126,772	13,663	9,430	2,805	1,250
Montmorency	3,689	486	0	19,590	0	56,926	0	2,502	2,671	10,378
Muskegon	128,001	21,787	10,845	124,851	0	321,148	119,861	99,964	13,478	21,563
Newaygo	24,167	12,582	15,971	27,165	0	66,833	12,301	10,949	866	1,960
Oakland	154,986	519,375	508,662	992,254	68,078	4,143,549	1,971,474	1,050,219	445,849	489,549
Oceana	2,429	0	0	36,036	0	42,625	22,449	6,759	8,431	18,955
Ogemaw	0	1,087	8,188	19,242	0	57,174	14,574	4,307	4,984	6,845
Ontonagon	0	2,220	2,121	23,379	0	21,952	3,196	2,051	2,812	17,301
Osceola	1,302	0	995	20,427	0	30,614	12,926	1,706	3,199	6,228
Oscoda	0	0	0	9,182	0	18,519	9,731	2,722	2,446	2,303
Otsego	0	0	3,174	28,330	0	95,411	11,078	5,870	23,947	73,840
Ottawa	221,826	36,592	21,731	96,560	0	391,499	94,785	76,777	83,967	64,471
Presque Isle	0	2,382	1,351	26,285	0	32,759	524	1,085	9,130	3,516
Roscommon	4,783	4,599	3,472	40,155	0	94,080	48,078	9,764	22,050	39,429
Saginaw	11,134	61,206	151,462	199,330	1,388	751,547	53,898	55,451	35,355	55,598
St. Clair	20,318	8,313	165,617	153,597	9,435	394,311	96,416	38,233	74,933	64,367
St. Joseph	14,638	5,748	8,505	120,970	1,213	104,299	97,794	12,907	24,598	11,289
Sanilac	5,094	0	9,713	47,088	0	58,277	14,250	3,983	6,813	7,264
Schoolcraft	0	0	3,005	11,806	0	21,396	643	1,783	12,460	41,019
Shiawassee	0	91	7,588	44,058	0	116,704	26,619	34,779	985	20,139
Tuscola	29,650	3,938	5,016	46,471	0	50,242	14,341	19,872	260	3,653
Van Buren	18,057	2,937	1,312	90,226	0	142,283	51,813	17,836	13,587	40,013
Washtenaw	8,511	50,190	114,392	187,378	42,612	809,998	372,354	126,719	69,207	160,622
Wayne	377,581	379,221	1,033,874	1,850,696	18,312	4,783,875	1,864,953	398,057	351,944	649,130
Wexford	0	10,321	9,801	50,634	0	69,777	12,582	14,476	8,187	23,938
Out of state	5,459	573,721	3,624,718	65,690	26,700	6,017,153	3,009,414	658,188	1,362,111	1,446,676
Total	$2,522,772	$2,483,698	$7,237,412	$9,262,905	$243,436	$31,747,488	$12,670,835	$4,947,144	$4,680,725	$6,361,753

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-15. Sales and use tax collections by Michigan county by Business Classification Code, Fourth Quarter 1987.

County	Watercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Hotel Dining Rooms (BCC 584)	Family Rest- aurants (BCC 585)	Fast Food Rest- aurants (BCC 586)	Sport- ing Goods (BCC 595)	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 363	$ 0	$ 850	$ 19,130	$ 0	$ 14,164	$ 2	$ 3,279	$ 324	$ 3,323
Alger	0	0	0	17,866	0	11,640	100	3,589	3,550	16,056
Allegan	11,140	12,614	7,740	78,388	2,143	99,098	20,147	8,256	9,747	14,470
Alpena	205	3,431	9,478	34,251	0	94,442	142,317	31,928	5,766	10,754
Antrim	2,668	0	972	17,588	0	37,167	3,999	7,740	37,140	47,838
Arenac	8,958	1,822	0	20,903	0	16,846	24,365	2,060	1,811	1,824
Baraga	0	0	1,859	8,931	0	8,704	3,184	2,029	403	2,508
Barry	853	3,352	1,268	17,839	0	51,794	11,178	67,109	70	1,367
Bay	7,494	292	51,799	90,046	0	335,980	115,733	55,038	5,474	10,456
Benzie	2,179	2,747	3,318	7,052	0	36,524	244	4,109	4,376	8,420
Berrien	23,467	44,492	29,752	177,976	0	271,955	378,526	50,791	30,995	45,503
Branch	3,653	6,079	7,609	25,688	294	77,311	9,869	11,253	8,911	11,859
Calhoun	4,331	2,610	8,694	108,885	0	794,220	158,977	24,743	28,088	18,607
Cass	2,767	2,633	3,086	44,727	0	21,060	12,042	4,520	0	694
Charlevoix	11,457	0	5,937	23,344	0	33,585	7,447	6,614	55,739	39,628
Cheboygan	6,442	3,544	0	26,308	0	30,464	26,774	5,679	3,064	6,019
Chippewa	0	3,385	0	48,604	65	91,610	39,285	15,794	10,871	18,632
Clare	0	3,669	4,796	28,738	0	42,725	5,736	47,057	14,489	5,924
Clinton	0	0	5,733	35,616	0	55,747	29,071	2,506	106	4,581
Crawford	0	0	1,322	18,353	0	29,699	3,239	5,460	17,543	27,128
Delta	1,641	216	142,876	62,309	6,461	107,014	29,578	14,168	6,407	18,963
Dickinson	1,846	16,840	11,718	44,888	1,342	25,872	87,673	7,378	2,733	15,336
Eaton	0	11,407	23,410	38,357	0	137,614	78,917	42,631	26,270	23,319
Emmet	20,154	2,794	16,009	78,639	6,814	52,780	18,556	45,792	15,500	48,477
Genesee	5,342	102,779	91,512	369,463	0	1,210,405	355,372	415,059	34,937	64,884
Gladwin	984	0	3,322	19,522	0	44,793	2,514	10,539	2,800	2,624
Gogebic	0	2,170	570	21,570	0	16,251	11,357	11,277	19,012	16,458
Grand Traverse	13,686	28,573	22,064	88,557	0	344,432	139,442	79,778	82,943	157,832
Gratiot	0	4,820	85,010	25,879	0	89,840	35,601	2,637	679	13,276
Hillsdale	455	4,647	7,067	26,723	0	80,150	20,800	4,968	2,370	3,407
Houghton	0	1,297	0	43,044	9,029	31,596	23,813	17,471	7,550	15,716
Huron	6,047	6,769	3,114	32,302	0	62,964	14,823	9,229	15,623	5,832
Ingham	5,454	110,[illegible]6	100,194	456,033	4,734	722,988	205,043	57,803	108,112	30,836
Ionia	0	0	1,330	28,253	0	35,169	34,019	2,560	5,360	2,803
Iosco	1,700	0	4,103	42,856	0	66,794	15,559	5,697	5,662	12,986
Iron	0	2,829	7,989	16,445	0	27,374	2,590	6,869	1,649	5,384
Isabella	0	9,856	13,983	58,843	0	160,481	126,527	18,572	21,109	36,962
Jackson	1,900	30,584	2,576	128,534	0	501,493	88,858	37,243	20,805	32,957
Kalamazoo	10,131	199,408	57,156	195,958	0	461,090	612,554	106,165	24,998	33,617
Kalkaska	1,369	0	225	10,601	0	41,003	1,361	5,960	522	3,103
Kent	39,490	175,414	767,114	404,284	0	1,654,194	366,185	164,571	310,481	284,755
Keweenaw	0	0	427	1,510	0	1,469	0	0	2,393	1,471
Lake	0	0	0	30,468	0	11,774	3,181	6,195	1,817	2,096
Lapeer	8,261	3,630	13,829	43,702	4,494	136,439	21,722	6,773	6,522	2,944

Leelanau	92	0	209	24,582	5,150	33,852	2,280	1,884	18,075	27,205
Lenawee	0	12,605	10,596	67,502	0	193,265	40,285	32,457	4,846	12,971
Livingston	7,353	6,478	9,456	64,466	0	187,348	149,925	24,965	842	27,383
Luce	128	0	0	4,995	0	11,150	2,350	2,713	1,365	1,970
Mackinac	938	131	719	19,161	0	37,312	8,852	7,100	78,802	25,728
Macomb	343,208	215,073	82,448	814,658	3,871	1,882,251	424,834	266,097	42,027	125,086
Manistee	1,794	8,959	476	40,003	0	33,501	14,021	7,370	4,096	23,347
Marquette	1,467	8,267	21,722	87,982	761	173,165	42,409	38,824	25,659	22,686
Mason	1,859	7,418	3,492	21,128	0	66,576	9,816	13,820	5,648	7,587
Mecosta	1,247	6,774	1,927	36,967	0	55,236	46,487	27,998	11,163	17,392
Menominee	5	0	2,964	30,155	0	38,778	18,793	1,813	1,775	8,850
Midland	6,029	43,566	27,720	40,922	0	148,812	18,630	25,623	29,034	39,030
Missaukee	0	0	0	15,457	0	8,828	2,969	2,006	261	2,047
Monroe	8,255	10,490	12,683	92,805	0	130,593	42,619	47,284	16,946	30,973
Montcalm	593	0	6,509	44,857	3,374	104,878	5,280	9,305	2,063	509
Montmorency	6,580	256	0	18,043	0	28,231	0	2,981	574	5,013
Muskegon	39,145	30,925	11,239	118,095	0	295,600	92,935	52,747	3,517	7,050
Newaygo	7,132	13,211	18,750	19,549	0	54,903	7,548	12,511	596	991
Oakland	36,086	805,689	614,368	1,194,999	93,390	4,082,731	1,822,968	1,400,113	587,265	509,995
Oceana	67	0	0	22,468	0	22,127	2,099	4,834	420	1,891
Ogemaw	0	1,625	6,319	23,216	0	41,221	8,565	3,720	3,022	3,767
Ontonagon	0	2,817	1,761	20,513	0	12,958	791	3,749	1,152	12,966
Osceola	0	0	710	20,404	0	26,561	9,631	5,682	2,300	2,096
Oscoda	0	0	0	10,159	0	15,562	5,607	2,880	1,228	804
Otsego	0	0	206	23,066	0	53,894	8,005	7,761	14,178	32,094
Ottawa	93,345	34,783	20,017	80,308	0	299,921	67,975	60,077	49,297	23,127
Presque Isle	0	3,569	1,325	24,096	0	19,221	2,654	218	3,879	1,637
Roscommon	636	4,102	2,344	29,808	0	54,831	25,934	3,157	10,067	9,604
Saginaw	5,231	106,950	190,558	210,511	1,999	780,893	41,561	72,124	33,858	38,033
St. Clair	4,479	828	197,217	118,439	10,227	317,829	89,280	36,597	76,247	44,118
St. Joseph	8,635	10,471	7,873	93,935	1,029	85,890	81,488	12,541	16,375	7,528
Sanilac	4,421	0	6,888	35,591	0	44,904	11,079	3,033	5,146	3,450
Schoolcraft	0	0	1,278	11,583	0	9,103	608	1,435	4,440	11,616
Shiawassee	0	3	7,676	44,242	0	106,769	21,324	44,172	4	7,544
Tuscola	13,785	6,707	4,762	45,656	0	45,339	13,609	5,527	752	2,198
Van Buren	3,903	2,339	189	60,352	0	82,712	33,507	8,413	478	7,291
Washtenaw	1,671	76,927	127,303	183,675	53,368	781,310	400,711	151,960	62,876	137,428
Wayne	159,832	603,023	1,347,153	1,909,679	18,642	4,640,144	1,665,394	344,772	352,598	532,815
Wexford	0	13,601	5,901	44,086	0	46,269	8,999	16,349	11,959	13,369
Out of state	1,244	912,013	4,424,474	65,335	69,612	5,732,642	2,961,790	1,168,731	1,321,634	1,364,544
Total	$963,597	$3,754,919	$8,699,043	$8,952,421	$296,799	$28,965,824	$11,501,892	$5,374,232	$3,771,185	$4,285,362

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-16. Sales and use tax collections by Michigan county by Business Classification Code, totals for 1987.

County	Watercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Hotel Dining Rooms (BCC 584)	Family Rest- aurants (BCC 585)	Fast Food Rest- aurants (BCC 586)	Sport- ing Goods (BCC 595)	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 4,873	$ 0	$ 1,228	$ 74,071	$ 0	$ 60,089	$ 3,762	$ 12,732	$ 4,419	$ 19,015
Alger	0	0	0	81,668	255	65,016	207	11,903	25,392	81,328
Allegan	337,627	46,606	31,190	385,972	16,142	470,011	106,784	53,397	54,703	106,361
Alpena	3,664	7,665	36,858	127,269	2,154	395,308	425,749	96,897	24,813	51,236
Antrim	95,784	0	4,694	71,757	0	218,979	13,697	51,498	120,224	200,770
Arenac	84,982	5,024	0	87,517	0	94,928	96,552	5,479	4,434	13,969
Baraga	0	0	5,807	32,446	0	37,893	22,839	6,062	3,890	10,874
Barry	5,350	8,278	4,482	78,373	0	201,305	73,413	131,051	2,637	7,490
Bay	141,167	687	173,931	376,788	0	1,326,972	461,377	324,618	24,659	50,437
Benzie	30,330	11,557	15,536	35,131	0	209,705	2,141	25,062	26,269	50,323
Berrien	188,697	140,251	102,051	762,194	0	1,110,474	1,477,282	219,007	132,764	237,382
Branch	70,356	17,102	37,346	98,834	294	327,553	62,027	51,239	35,091	60,428
Calhoun	34,635	7,230	31,816	443,475	0	3,101,802	653,013	113,681	129,990	78,511
Cass	37,176	7,256	16,652	198,871	0	91,152	52,685	22,724	885	9,126
Charlevoix	121,936	0	28,250	117,718	0	209,004	59,177	33,538	293,397	209,186
Cheboygan	121,125	9,942	1,070	100,937	0	167,669	125,510	28,505	17,397	47,499
Chippewa	23	8,039	0	201,874	693	458,595	152,632	52,678	59,315	153,179
Clare	1	10,699	18,757	108,870	0	183,787	25,312	119,066	56,383	28,741
Clinton	0	0	19,296	143,942	0	210,985	104,842	4,342	2,991	9,530
Crawford	1,583	0	4,099	79,208	0	138,173	23,099	19,724	86,027	141,255
Delta	14,474	3,927	443,501	238,874	21,416	470,945	127,394	58,977	29,843	108,971
Dickinson	9,509	50,013	38,672	164,773	4,692	94,240	359,290	16,748	17,722	62,063
Eaton	0	29,023	85,262	148,577	0	568,860	304,715	179,278	102,534	107,547
Emmet	197,134	10,028	76,276	380,791	39,692	394,019	124,030	175,345	155,870	428,353
Genesee	107,122	305,220	356,121	1,470,179	0	4,838,989	1,478,024	1,649,499	137,289	295,353
Gladwin	50,461	0	11,411	75,471	0	192,330	14,468	39,455	9,447	9,721
Gogebic	0	4,103	1,795	94,302	0	75,928	54,875	32,750	79,185	86,870
Grand Traverse	152,107	101,909	83,753	375,176	0	1,546,326	572,348	349,423	446,972	1,037,930
Gratiot	0	14,731	309,611	106,644	0	359,251	120,007	14,784	4,843	62,571
Hillsdale	5,681	11,729	28,831	103,198	0	336,377	94,619	19,728	10,967	12,804
Houghton	155	1,297	1,356	183,161	28,869	136,608	103,637	56,442	48,069	86,875
Huron	104,060	18,775	11,499	133,718	0	295,569	76,369	37,757	71,421	35,435
Ingham	50,919	307,429	363,690	1,639,084	24,324	2,960,832	835,239	241,349	412,918	149,757
Ionia	0	1,646	4,959	109,497	0	153,741	142,185	17,911	28,866	15,567
Iosco	18,027	0	19,072	161,605	0	328,455	75,491	25,485	33,674	90,139
Iron	0	7,192	24,221	65,538	0	118,399	12,994	24,388	5,643	20,389
Isabella	0	23,594	52,867	223,557	0	610,121	441,492	66,747	91,618	154,653
Jackson	17,989	80,512	12,716	517,001	1,109	1,912,613	381,303	132,272	87,399	150,094
Kalamazoo	120,382	637,647	234,590	717,101	0	1,776,003	2,292,777	423,040	169,573	148,210
Kalkaska	24,869	0	941	42,303	0	173,383	7,712	18,879	5,455	17,816
Kent	350,501	471,912	2,520,538	1,601,840	0	6,514,989	1,475,856	867,236	1,065,836	969,382
Keweenaw	0	0	1,262	7,008	0	14,665	65	0	22,758	17,560
Lake	0	0	0	106,364	0	45,493	22,234	18,603	6,738	10,417
Lapeer	64,880	9,475	43,041	167,461	17,385	568,140	85,317	22,845	23,670	9,573

Leelanau	2,947	0	1,336	118,817	31,027	206,872	19,308	15,064	130,728	237,834
Lenawee	0	36,446	39,327	289,135	0	770,976	185,977	179,613	16,096	52,574
Livingston	127,389	15,715	31,090	263,566	0	779,996	616,733	122,083	6,281	117,631
Luce	5,654	0	0	21,017	0	56,758	12,321	9,658	7,583	17,726
Mackinac	9,129	2,640	7,776	122,272	0	282,398	69,178	54,745	855,765	288,508
Macomb	2,291,441	766,670	297,653	3,340,778	11,228	7,590,272	1,641,177	1,104,214	241,844	417,543
Manistee	15,242	24,287	3,116	159,702	0	147,542	63,563	25,793	30,635	120,871
Marquette	33,823	11,998	77,097	349,983	2,156	682,215	177,923	125,823	120,041	155,893
Mason	17,732	23,446	13,643	98,875	0	320,085	56,647	55,038	34,873	78,220
Mecosta	37,449	20,965	8,353	140,593	0	233,093	172,964	90,040	43,378	58,435
Menominee	2,330	0	10,821	123,991	0	147,999	78,777	7,263	5,153	22,203
Midland	42,599	120,171	97,803	161,103	0	580,793	67,525	105,916	97,325	163,036
Missaukee	7,820	0	0	51,472	0	37,691	15,016	7,138	2,107	9,347
Monroe	114,227	31,671	47,699	401,831	0	527,926	185,862	141,731	65,897	133,857
Montcalm	6,503	0	23,019	170,784	3,374	432,397	37,397	36,324	10,653	2,885
Montmorency	21,218	1,306	0	64,797	0	132,834	0	7,769	7,822	23,636
Muskegon	434,714	93,535	42,115	489,003	0	1,152,044	411,898	318,900	27,718	44,762
Newaygo	66,112	45,203	55,073	88,465	0	219,958	39,543	36,011	1,954	4,457
Oakland	538,665	2,396,586	2,152,745	4,224,993	315,597	16,142,916	7,187,426	4,343,822	1,715,334	1,898,369
Oceana	5,837	0	0	107,557	0	119,691	35,281	19,156	11,670	28,791
Ogemaw	0	4,375	27,487	73,428	0	172,100	38,394	12,226	12,670	19,265
Ontonagon	0	8,865	6,324	75,147	0	63,442	7,722	10,177	7,508	55,349
Osceola	2,196	0	3,433	75,873	0	102,139	41,959	10,068	11,892	10,124
Oscoda	0	0	0	33,844	0	56,972	24,152	8,049	6,224	5,821
Otsego	0	0	7,552	95,428	0	266,752	37,521	22,954	58,867	171,381
Ottawa	468,703	133,705	79,609	345,713	0	1,340,939	317,360	318,674	264,924	149,988
Presque Isle	0	9,424	4,457	88,234	0	84,670	4,335	2,172	18,789	7,717
Roscommon	14,415	13,747	9,797	126,419	0	243,687	137,666	20,986	55,978	74,559
Saginaw	43,292	296,978	617,495	832,587	6,963	2,786,580	171,155	227,656	120,184	148,354
St. Clair	47,372	22,520	656,278	529,786	37,928	1,351,742	359,325	132,686	229,550	176,479
St. Joseph	53,916	25,417	31,252	414,832	4,547	371,571	333,543	54,123	80,817	26,868
Sanilac	21,228	0	28,866	147,584	0	191,172	48,184	12,513	23,207	17,662
Schoolcraft	0	0	5,172	44,333	0	47,497	2,233	5,721	27,923	76,280
Shiawassee	0	425	26,454	173,961	0	443,269	97,312	150,896	6,273	44,207
Tuscola	148,277	16,961	19,649	184,335	0	189,788	58,722	65,459	2,337	11,645
Van Buren	52,692	8,951	3,738	272,938	0	388,032	164,049	60,561	20,082	68,223
Washtenaw	18,711	223,946	426,795	732,083	185,576	3,116,520	1,470,522	478,045	249,167	542,825
Wayne	1,539,272	1,728,608	4,495,084	7,542,246	61,887	19,183,138	6,968,108	1,466,354	1,415,544	2,316,760
Wexford	0	40,335	33,815	159,603	0	214,867	40,030	58,555	41,458	69,065
Out of state	16,355	2,462,807	13,713,185	3,538,579	167,176	22,285,112	11,315,807	3,265,542	5,200,678	5,410,736
Total	$8,774,839	$10,958,201	$28,364,156	$38,715,825	$984,484	$117,030,121	$45,857,156	$19,061,662	$15,460,919	$18,934,576

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-17. Sales and use tax collections by Michigan county by Business Classification Code, First Quarter 1988.

County	atercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Hotel Dining Rooms (BCC 584)	Family Rest-aurants (BCC 585)	Fast Food Rest-aurants (BCC 586)	Sport-ing Goods (BCC 595)	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 0	$ 0	$ 398	$ 13,162	$ 0	$ 6,946	$ 0	$ 1,152	$ 0	$ 423
Alger	0	0	0	18,126	0	11,989	170	2,658	3,628	15,974
Allegan	38,039	8,238	4,922	71,741	17	83,682	15,622	8,791	11,193	9,389
Alpena	0	1,320	6,884	29,649	0	127,551	123,054	17,405	3,772	8,302
Antrim	5,473	0	255	14,935	0	27,295	3,294	12,030	40,443	51,062
Arenac	13,953	926	0	17,596	0	12,006	17,522	634	674	1,899
Baraga	0	0	1,130	7,078	0	7,368	3,701	1,406	446	1,567
Barry	255	1,187	796	16,654	0	47,526	12,431	20,642	282	811
Bay	41,704	216	35,743	96,187	0	304,983	91,295	40,946	4,318	10,504
Benzie	7,150	1,605	2,228	5,160	0	39,546	75	2,152	3,333	5,660
Berrien	28,312	24,522	19,184	162,694	0	252,041	349,961	36,200	25,301	46,158
Branch	12,124	3,298	8,137	25,553	707	66,856	10,358	6,052	7,814	12,094
Calhoun	3,454	1,495	8,233	105,252	0	688,219	145,504	18,916	28,542	15,785
Cass	4,598	1,375	2,037	41,764	0	28,906	11,310	5,816	193	858
Charlevoix	8,293	0	3,042	20,238	0	30,480	8,827	1,066	154,227	67,058
Cheboygan	16,023	1,500	353	22,995	0	22,215	18,222	8,155	3,281	5,373
Chippewa	0	1,484	0	45,673	2,116	78,144	35,043	11,390	7,120	15,563
Clare	0	1,925	3,447	28,387	0	32,791	5,806	19,132	11,783	4,944
Clinton	0	0	3,811	37,448	0	49,928	25,625	504	31	1,681
Crawford	0	0	1,287	13,591	0	28,414	2,386	6,317	18,691	30,531
Delta	1,758	62	96,009	56,314	4,722	85,268	27,670	8,993	5,742	14,730
Dickinson	1,767	8,721	7,376	41,832	1,906	21,270	74,824	5,122	3,064	14,323
Eaton	0	5,037	18,315	36,308	0	129,983	67,521	29,203	25,726	27,179
Emmet	42,285	234	6,325	72,966	3,549	47,556	15,711	47,390	27,216	48,173
Genesee	15,868	56,550	75,518	372,681	0	1,088,003	296,019	352,541	32,711	57,994
Gladwin	5,817	0	2,102	14,485	0	33,167	2,778	7,945	2,052	2,141
Gogebic	0	696	266	29,179	0	14,952	11,495	20,044	53,145	23,336
Grand Traverse	33,603	16,178	12,199	71,824	0	308,334	113,205	60,839	71,958	132,000
Gratiot	0	2,767	43,341	25,010	0	84,464	34,271	1,941	866	9,739
Hillsdale	833	1,463	7,559	28,756	0	65,886	20,855	2,582	2,504	2,295
Houghton	0	483	0	43,312	7,155	34,316	22,952	10,052	5,364	15,999
Huron	6,996	3,149	2,635	28,160	0	55,480	13,755	3,981	11,390	3,776
Ingham	9,548	67,179	79,761	431,133	7,382	649,308	232,239	43,874	106,684	27,741
Ionia	0	0	697	19,464	0	36,020	28,998	1,299	2,688	3,647
Iosco	5,138	0	4,562	35,494	0	58,295	13,506	3,279	21,800	8,843
Iron	0	1,206	2,842	17,207	0	23,280	1,380	9,636	931	2,519
Isabella	0	3,515	9,773	55,364	0	139,486	92,108	9,847	16,777	37,684
Jackson	33,908	16,541	1,787	120,124	0	232,782	247,491	24,677	15,005	28,803
Kalamazoo	12,027	141,204	49,946	178,912	0	431,010	563,297	94,358	37,170	36,362
Kalkaska	1,224	0	0	10,224	0	35,457	1,299	2,324	525	2,977
Kent	130,572	92,105	560,674	401,898	4,358	1,641,612	311,884	657,580	229,732	207,453
Keweenaw	0	0	0	1,238	0	1,864	0	0	3,626	1,068
Lake	0	0	0	21,215	0	7,197	1,575	2,480	977	964
Lapeer	17,431	3,365	6,883	38,956	3,992	126,546	17,978	4,346	7,533	1,596

Leelanau	0	0	480	21,285	3,600	26,389	1,311	858	30,122	36,925
Lenawee	0	6,750	8,246	68,006	0	174,844	111,247	23,010	5,032	10,660
Livingston	15,613	2,726	6,833	59,231	0	181,633	104,614	24,231	646	20,704
Luce	0	0	0	6,318	0	10,192	2,033	900	529	2,073
Mackinac	1,147	0	0	10,133	0	22,690	1,135	6,694	3,180	3,647
Macomb	476,589	64,429	53,605	785,299	17,096	1,759,907	406,075	228,682	73,560	73,321
Manistee	1,386	4,459	983	31,370	0	26,898	12,247	2,484	5,646	14,911
Marquette	2,346	4,372	18,234	81,612	394	107,279	99,239	28,163	21,104	19,216
Mason	3,970	3,231	4,009	22,528	0	41,232	10,208	8,010	3,812	4,186
Mecosta	2,414	3,815	1,413	33,334	0	48,327	41,831	19,973	8,813	13,426
Menominee	392	0	2,331	28,063	0	30,941	17,509	1,311	564	2,376
Midland	10,328	23,378	21,499	42,256	0	142,237	15,301	16,975	25,767	38,473
Missaukee	456	0	0	11,569	0	7,031	2,230	879	107	1,439
Monroe	12,603	6,232	11,842	88,045	0	122,469	51,275	40,418	17,566	31,900
Montcalm	1,174	0	3,580	41,528	2,731	92,070	4,753	6,688	3,358	355
Montmorency	9,082	60	0	12,621	0	19,697	473	752	1,437	3,597
Muskegon	23,927	18,842	9,823	121,670	0	279,047	87,351	69,052	5,285	7,038
Newaygo	13,935	8,489	11,692	12,284	0	47,858	6,871	5,348	11	2,759
Oakland	52,175	510,170	405,442	1,136,362	88,647	3,830,433	1,680,852	860,487	538,109	428,674
Oceana	28	0	0	18,424	0	21,915	1,852	3,107	8	831
Ogemaw	0	550	5,627	22,426	0	31,914	5,430	2,129	1,306	1,099
Ontonagon	0	1,150	1,090	17,692	0	13,109	0	1,421	1,317	12,514
Osceola	611	0	581	14,014	0	27,969	8,286	1,995	2,853	775
Oscoda	0	0	0	7,759	0	10,034	4,065	590	828	1,223
Otsego	0	0	366	22,853	0	52,695	7,435	6,860	16,286	38,834
Ottawa	62,825	28,253	21,557	77,652	0	286,334	73,219	70,368	42,069	19,306
Presque Isle	0	1,800	684	21,221	0	13,994	6,619	267	3,047	964
Roscommon	2,315	1,787	880	30,234	0	47,061	28,559	1,700	8,920	10,869
Saginaw	8,493	64,735	117,959	194,641	1,603	598,796	35,649	57,183	32,205	36,559
St. Clair	3,540	380	126,403	110,858	9,319	289,591	99,644	24,205	59,549	38,751
St. Joseph	8,438	6,129	5,987	81,913	943	79,921	78,141	9,150	11,168	4,932
Sanilac	0	0	3,678	30,471	0	36,738	10,330	1,563	4,289	2,858
Schoolcraft	0	335	1,711	10,382	0	6,160	44	486	3,389	6,374
Shiawassee	0	0	5,075	39,496	0	101,317	20,872	26,990	101	7,492
Tuscola	25,839	2,605	2,210	40,971	0	37,770	16,988	7,636	906	1,856
Van Buren	12,143	1,631	183	51,883	0	72,436	33,546	7,863	0	6,030
Washtenaw	851	43,177	72,769	178,976	42,349	761,417	353,503	94,381	50,116	117,354
Wayne	289,167	329,589	852,734	1,860,443	16,701	4,502,691	1,626,293	284,628	315,783	512,494
Wexford	2,338	7,691	4,996	38,259	0	33,605	8,774	9,853	23,771	30,459
Out of state	34,909	626,168	2,763,039	60,269	52,179	4,765,042	2,991,466	611,826	1,229,007	1,277,984
Total	$1,577,187	$2,242,479	$5,637,998	$8,490,290	$271,466	$26,060,105	$11,160,287	$4,194,813	$3,561,824	$3,862,216

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-18. Sales and use tax collections by Michigan county by Business Classification Code, Second Quarter 1988.

County	Watercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Hotel Dining Rooms (BCC 584)	Family Rest-aurants (BCC 585)	Fast Food Rest-aurants (BCC 586)	Sport-ing Goods (BCC 595)	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 3,287	$ 0	$ 864	$ 19,458	$ 0	$ 15,829	$ 1,384	$ 2,886	$ 880	$ 2,074
Alger	0	0	0	19,358	0	15,260	175	2,995	13,249	21,079
Allegan	177,612	11,714	8,288	111,215	5,174	131,486	32,463	21,001	15,117	35,160
Alpena	1,310	1,471	8,122	33,398	614	172,786	153,460	31,509	5,012	12,909
Antrim	43,983	0	990	20,832	0	44,579	5,181	13,792	32,594	42,178
Arenac	44,879	1,134	0	25,410	0	23,810	25,201	1,152	1,163	3,750
Baraga	0	0	1,396	8,588	0	8,339	9,328	1,410	963	2,611
Barry	2,417	1,512	1,385	18,698	0	57,105	25,307	20,031	713	1,587
Bay	62,464	136	38,293	105,871	0	339,278	109,907	94,560	3,270	16,626
Benzie	12,677	2,454	3,648	11,034	0	47,654	371	6,019	5,896	8,232
Berrien	105,345	29,222	27,456	187,380	0	356,176	436,005	87,079	38,996	79,343
Branch	56,588	3,424	12,156	23,592	2,025	69,357	22,454	19,501	10,587	16,902
Calhoun	25,252	1,598	8,603	109,900	0	783,142	160,368	32,585	38,405	28,211
Cass	34,856	1,818	4,868	49,795	0	30,442	14,841	19,421	257	2,793
Charlevoix	54,421	0	7,127	29,487	0	42,917	18,573	2,791	42,378	38,367
Cheboygan	39,566	1,382	8,776	25,682	0	44,041	44,065	14,091	3,967	28,107
Chippewa	9,041	2,147	0	56,260	4,180	118,516	39,778	11,649	21,846	33,361
Clare	49	2,246	6,628	29,517	0	44,063	12,079	19,616	14,179	6,742
Clinton	0	0	3,832	32,709	0	57,611	28,490	484	0	2,223
Crawford	1,959	0	4,068	16,030	0	36,281	7,068	5,545	25,346	36,540
Delta	9,818	51	105,573	61,407	6,945	105,947	38,890	24,892	4,809	29,887
Dickinson	3,501	10,233	9,845	48,410	688	19,784	92,984	2,609	2,854	18,606
Eaton	720	6,582	26,599	36,874	0	155,144	82,130	60,615	26,758	25,962
Emmet	58,927	1,824	12,969	88,746	0	96,589	32,272	27,842	29,366	75,052
Genesee	56,636	57,516	77,115	355,518	0	1,210,135	374,011	642,634	26,395	67,750
Gladwin	29,082	0	3,463	19,280	0	54,667	4,589	9,830	2,013	2,699
Gogebic	0	938	599	25,596	0	17,707	16,098	3,023	8,923	13,133
Grand Traverse	100,921	19,057	15,071	88,873	0	421,120	149,641	106,187	117,364	247,276
Gratiot	0	3,439	64,932	25,241	0	94,523	46,093	4,419	1,176	15,480
Hillsdale	2,893	1,608	8,822	27,736	0	85,599	28,686	5,115	1,942	4,008
Houghton	38	1,055	0	43,620	10,501	38,489	27,997	19,481	11,998	16,057
Huron	61,006	4,511	3,419	30,960	0	81,181	25,997	13,183	17,578	9,551
Ingham	39,179	83,585	81,348	430,728	5,851	750,448	264,610	78,398	110,920	32,563
Ionia	0	0	1,006	25,196	0	42,327	41,764	7,364	8,036	5,061
Iosco	11,839	0	7,338	41,583	0	86,957	21,745	6,086	21,391	28,154
Iron	0	1,390	4,992	16,972	0	29,293	3,659	5,900	2,335	3,441
Isabella	0	5,705	11,576	52,225	0	163,093	131,986	15,727	18,399	47,394
Jackson	95,261	11,727	2,836	134,696	0	278,943	311,845	43,017	20,105	36,447
Kalamazoo	74,548	141,339	57,709	179,542	0	480,341	642,327	204,227	46,172	50,321
Kalkaska	13,141	0	120	13,526	0	45,815	1,994	4,551	182	4,805
Kent	311,663	101,767	589,428	396,032	6,855	1,777,811	394,012	788,546	247,220	242,619
Keweenaw	0	0	0	669	0	2,646	0	0	3,316	2,528
Lake	78	0	0	25,844	0	13,140	6,836	5,349	1,445	1,882
Lapeer	44,862	1,180	7,631	40,643	4,910	143,449	29,848	5,156	9,142	1,885

Leelanau	587	0	2,194	31,249	7,061	54,331	6,105	4,084	19,414	30,574
Lenawee	0	9,632	9,982	70,821	0	211,777	128,774	88,363	5,279	13,102
Livingston	82,209	4,318	8,859	73,318	0	216,607	170,572	44,926	672	26,077
Luce	1,236	0	0	4,545	0	14,989	2,856	1,821	1,122	3,856
Mackinac	2,587	479	0	33,149	0	69,097	5,237	23,789	195,493	76,660
Macomb	1,205,216	72,951	84,275	860,340	23,794	1,992,683	484,872	378,837	65,655	105,836
Manistee	7,622	5,726	1,267	38,846	681	40,179	19,062	7,243	6,442	22,045
Marquette	22,659	5,043	19,981	83,956	685	127,691	127,304	32,924	36,688	27,965
Mason	17,502	4,747	4,345	23,930	0	75,780	20,082	13,325	7,061	20,476
Mecosta	21,180	4,622	2,013	31,596	0	56,591	50,806	22,782	8,974	12,782
Menominee	3,732	0	3,229	31,743	0	40,190	21,292	3,469	43	2,112
Midland	24,783	27,475	25,980	44,677	0	165,283	25,624	26,775	27,762	48,880
Missaukee	12,674	0	0	17,710	0	10,241	4,535	2,018	416	2,635
Monroe	51,388	8,228	13,902	114,579	0	155,974	74,722	32,489	18,774	25,732
Montcalm	5,870	0	3,332	45,250	6,169	121,823	13,635	14,604	2,978	986
Montmorency	15,579	243	0	14,731	0	35,853	1,219	1,537	972	6,249
Muskegon	79,092	23,001	10,977	130,803	0	316,321	116,645	156,940	11,346	9,983
Newaygo	28,137	8,019	13,603	14,680	0	60,170	11,138	8,962	1,037	2,586
Oakland	228,038	605,204	454,656	1,149,201	67,655	4,112,189	2,095,201	1,127,896	629,919	469,409
Oceana	7,537	0	0	25,292	0	37,251	11,270	4,489	2,667	6,295
Ogemaw	2,086	1,106	8,619	19,068	0	48,667	14,483	3,893	1,892	2,504
Ontonagon	0	1,980	1,448	18,477	0	17,176	1,143	2,542	1,762	12,404
Osceola	1,242	0	812	17,381	0	35,162	12,695	1,460	3,014	1,126
Oscoda	0	0	0	8,735	0	15,938	7,853	2,125	941	1,871
Otsego	0	705	679	24,550	0	63,123	9,685	3,469	14,152	39,052
Ottawa	334,005	27,502	25,725	92,736	0	393,464	103,539	138,186	63,186	54,688
Presque Isle	0	2,181	1,126	23,354	0	23,836	10,717	384	4,150	2,777
Roscommon	7,131	3,721	2,495	32,445	0	63,499	33,272	12,015	12,174	16,157
Saginaw	24,808	63,409	137,046	204,008	2,224	716,531	57,614	44,691	43,502	62,006
St. Clair	23,684	4,472	180,829	139,826	9,816	370,130	128,422	46,701	84,978	58,979
St. Joseph	18,714	7,556	7,042	96,771	989	103,594	105,443	19,734	10,405	6,106
Sanilac	0	0	8,108	40,223	0	50,317	15,141	4,559	5,197	5,075
Schoolcraft	0	1,119	2,155	8,929	0	13,106	0	926	5,839	17,052
Shiawassee	0	110	6,262	40,275	0	116,284	27,970	42,560	2,752	5,796
Tuscola	77,037	3,543	2,710	41,704	0	48,300	20,635	40,778	306	3,461
Van Buren	27,670	1,550	1,292	75,275	0	97,600	46,434	11,779	5,818	17,796
Washtenaw	12,632	52,854	103,275	183,061	50,074	838,727	386,017	157,760	93,853	175,132
Wayne	724,729	402,534	1,043,304	1,928,951	17,685	4,822,039	1,847,524	477,762	374,987	605,434
Wexford	12,102	9,416	7,701	41,739	0	41,359	11,511	13,736	20,579	28,926
Out of state	50,298	698,805	3,452,037	83,419	26,030	5,358,860	3,510,699	746,985	1,422,664	1,409,210
Total	$4,723,585	$2,576,016	$6,890,151	$9,105,474	$260,606	$29,786,552	$13,658,260	$6,261,586	$4,229,522	$4,841,148

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-19. Sales and use tax collections by Michigan county by Business Classification Code, Third Quarter 1988.

County	Watercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Hotel Dining Rooms (BCC 584)	Family Rest- aurants (BCC 585)	Fast Food Rest- aurants (BCC 586)	Sport- ing Goods (BCC 595)	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 2,983	$ 0	$ 1,596	$ 27,392	$ 0	$ 28,733	$ 1,949	$ 5,332	$ 4,504	$ 8,528
Alger	0	0	0	28,587	0	26,134	162	3,250	23,025	39,149
Allegan	80,974	16,258	9,770	141,265	7,867	156,470	37,756	14,258	19,928	62,614
Alpena	2,086	1,619	9,506	41,729	943	209,194	155,699	28,285	7,124	25,609
Antrim	30,386	0	1,994	35,414	0	74,415	7,486	29,108	82,546	140,847
Arenac	36,250	1,278	0	31,715	0	30,240	28,953	1,670	2,409	5,983
Baraga	0	0	1,399	9,545	0	10,907	9,594	1,492	4,240	7,234
Barry	1,968	1,700	1,052	19,622	0	57,686	20,718	32,760	1,507	2,723
Bay	48,159	67	38,370	110,845	0	351,998	121,805	77,221	4,320	23,115
Benzie	18,257	5,067	6,599	21,141	0	98,781	696	11,785	15,239	29,727
Berrien	84,314	24,794	27,335	216,914	0	408,517	504,805	72,068	59,820	108,443
Branch	40,408	3,753	10,263	27,220	2,179	50,446	20,091	20,363	9,717	24,023
Calhoun	11,740	1,673	7,585	118,568	0	840,688	190,640	29,354	51,648	37,969
Cass	16,645	1,512	6,299	56,940	0	35,314	15,859	13,934	1,018	5,415
Charlevoix	53,067	0	15,321	57,820	0	84,018	28,979	5,875	95,687	112,863
Cheboygan	34,870	3,082	11,691	36,173	0	82,154	67,171	15,248	8,599	33,913
Chippewa	11,920	2,375	0	73,878	6,378	193,710	49,141	15,719	34,157	93,576
Clare	532	2,733	3,568	31,519	0	50,460	13,141	54,947	18,244	9,867
Clinton	0	0	3,527	37,357	0	61,271	35,217	1,558	135	2,794
Crawford	698	0	1,901	19,779	0	40,082	9,243	6,294	28,625	54,146
Delta	5,387	86	153,913	71,264	7,593	145,388	44,604	18,295	7,316	55,577
Dickinson	2,762	8,593	9,204	47,313	0	25,629	104,245	4,957	5,067	26,468
Eaton	2,588	4,470	20,485	37,126	0	154,622	81,973	54,839	28,921	44,271
Emmet	107,303	5,200	21,617	188,296	2,608	233,367	57,598	58,656	93,784	326,496
Genesee	37,542	56,070	73,112	365,393	0	1,262,823	365,037	534,216	21,044	87,430
Gladwin	18,878	0	3,485	19,914	0	71,405	6,434	12,706	2,693	3,298
Gogebic	0	1,198	487	29,068	0	25,926	18,554	3,080	13,528	27,467
Grand Traverse	83,991	26,473	21,012	113,358	0	580,802	194,283	146,536	200,886	584,004
Gratiot	0	3,089	25,105	23,205	0	103,128	57,284	5,663	715	20,448
Hillsdale	2,454	2,072	8,215	28,217	0	101,931	31,443	6,347	3,032	4,211
Houghton	128	1,049	0	48,341	14,412	55,261	31,146	15,399	14,916	37,010
Huron	34,383	4,913	2,603	37,891	0	108,173	27,100	15,200	29,413	24,845
Ingham	21,600	61,921	73,835	437,148	6,411	780,272	258,286	53,523	90,188	36,810
Ionia	0	0	740	28,851	0	43,341	42,683	4,707	9,571	5,222
Iosco	12,169	0	8,071	51,764	0	127,849	22,158	8,262	27,947	72,402
Iron	0	1,521	2,279	17,061	0	39,744	4,414	5,260	2,264	7,763
Isabella	0	4,621	9,468	53,301	0	208,600	182,128	18,238	17,730	56,712
Jackson	40,286	11,179	2,510	136,419	0	274,441	314,209	34,893	12,204	54,277
Kalamazoo	38,415	163,270	56,026	173,360	0	504,571	663,878	173,059	54,817	135,983
Kalkaska	7,718	0	148	16,822	0	61,988	2,642	7,651	479	7,690
Kent	165,445	106,995	611,243	400,626	5,188	1,770,981	420,498	749,530	223,704	252,953
Keweenaw	0	0	0	842	0	8,240	0	0	14,556	14,413
Lake	44	0	0	32,604	0	17,508	8,817	5,723	2,066	4,231
Lapeer	19,772	1,140	8,974	42,572	5,315	146,188	35,272	7,189	10,119	2,545

Leelanau	783	0	5,730	59,217	17,522	126,515	15,736	6,700	62,746	145,050
Lenawee	0	7,887	11,394	72,853	0	218,944	127,819	59,255	15,670	9,746
Livingston	39,249	3,553	7,119	70,376	0	228,157	190,403	31,321	1,287	33,205
Luce	5,618	0	0	5,387	0	23,883	4,703	2,605	4,620	11,788
Mackinac	3,151	2,661	0	68,514	0	159,296	10,614	20,983	511,393	256,840
Macomb	572,700	65,748	91,910	850,872	20,522	1,952,697	498,130	331,108	85,274	116,166
Manistee	6,568	7,810	5,478	53,227	520	57,997	26,003	10,898	10,126	63,507
Marquette	12,203	5,171	21,531	93,615	1,444	156,296	150,566	38,195	38,272	54,899
Mason	12,512	4,981	4,380	25,392	0	124,853	27,556	19,209	15,226	60,982
Mecosta	13,608	5,278	2,286	35,094	0	64,084	52,735	23,842	8,358	17,290
Menominee	2,044	0	3,098	31,785	0	46,733	22,203	4,496	871	7,682
Midland	20,591	26,007	21,868	46,554	0	171,383	25,997	26,991	24,944	62,590
Missaukee	5,099	0	0	22,134	0	12,885	5,590	2,280	1,152	4,342
Monroe	29,681	6,444	13,547	107,357	0	154,632	72,091	41,590	16,953	33,409
Montcalm	4,422	0	3,406	47,668	8,035	128,595	11,187	9,243	3,093	1,217
Montmorency	11,267	466	0	20,854	0	76,134	2,304	1,586	2,977	10,935
Muskegon	50,515	25,175	11,091	137,236	0	349,666	139,993	118,283	16,680	17,028
Newaygo	16,858	9,894	15,468	16,829	0	69,805	10,941	12,219	2,067	3,175
Oakland	131,614	473,185	460,493	1,147,586	74,305	4,187,053	2,172,101	1,185,989	606,863	490,805
Oceana	2,526	0	0	36,552	0	48,241	18,315	6,762	8,532	19,076
Ogemaw	2,620	1,013	7,027	23,045	0	67,106	24,539	5,245	5,698	3,049
Ontonagon	0	2,250	2,919	23,635	0	24,954	1,976	2,844	3,648	16,921
Osceola	0	0	971	18,472	0	34,174	13,054	1,979	3,124	1,439
Oscoda	0	0	0	11,245	0	22,248	11,065	2,321	2,793	2,957
Otsego	0	1,486	787	31,179	0	101,460	13,575	4,606	25,889	82,392
Ottawa	288,793	34,958	23,291	104,263	0	411,339	115,957	91,692	89,358	77,302
Presque Isle	0	2,868	1,470	28,477	0	38,163	21,530	1,241	11,588	3,926
Roscommon	3,394	5,053	3,198	40,197	0	80,744	41,942	16,964	23,082	45,869
Saginaw	18,543	80,042	138,356	200,807	1,824	825,069	59,795	52,441	56,986	87,520
St. Clair	24,015	419	189,432	155,016	10,576	402,302	141,788	46,616	84,659	87,541
St. Joseph	15,555	7,826	7,792	112,455	1,025	114,171	144,066	15,785	13,992	12,079
Sanilac	0	0	9,465	48,996	0	57,697	15,961	5,134	6,969	7,419
Schoolcraft	0	1,444	2,776	9,156	0	23,360	0	1,504	11,523	45,266
Shiawassee	0	393	5,566	39,837	0	118,747	29,909	39,674	857	9,454
Tuscola	46,869	3,621	2,613	47,626	0	49,778	23,792	16,396	305	3,951
Van Buren	21,644	2,677	1,341	98,954	0	113,866	49,196	10,715	14,890	50,535
Washtenaw	5,093	50,020	109,194	181,653	41,600	835,905	399,118	139,104	78,222	198,516
Wayne	422,176	353,241	905,726	1,933,058	16,426	4,881,678	1,821,338	407,870	330,089	599,406
Wexford	10,897	10,581	9,010	53,995	0	52,448	27,954	15,497	28,218	49,983
Out of state	34,531	711,047	3,732,946	146,195	10,927	5,995,285	3,731,325	894,806	1,580,416	1,511,383
Total	$2,911,261	$2,442,970	$7,102,987	$9,801,542	$263,620	$32,351,739	$14,566,658	$6,110,439	$5,168,862	$7,037,704

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-20. Sales and use tax collections by Michigan county by Business Classification Code, Fourth Quarter 1988.

County	Watercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Hotel Dining Rooms (BCC 584)	Family Rest- aurants (BCC 585)	Fast Food Rest- aurants (BCC 586)	Sport- ing Goods (BCC 595)	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 979	$ 0	$ 718	$ 17,012	$ 0	$ 16,648	$ 0	$ 2,883	$ 671	$ 1,578
Alger	0	0	0	17,861	0	10,890	167	2,695	4,191	19,284
Allegan	20,944	12,202	8,494	72,089	2,394	118,415	21,196	7,218	15,410	19,318
Alpena	172	3,211	10,329	39,982	0	159,616	138,403	32,331	4,690	12,710
Antrim	5,882	0	872	19,532	0	35,404	4,827	10,809	50,857	62,907
Arenac	10,424	1,744	0	25,738	0	14,846	21,568	2,090	1,230	2,732
Baraga	0	0	1,814	8,112	0	7,538	4,429	2,244	4,645	3,969
Barry	1,215	2,868	1,098	20,167	0	51,690	7,468	43,201	87	1,435
Bay	14,669	258	48,689	104,926	0	335,975	108,028	45,511	4,115	11,934
Benzie	888	2,730	3,533	10,402	0	37,274	406	3,163	5,749	8,324
Berrien	30,839	42,195	25,589	178,391	0	311,427	450,395	56,467	39,460	53,851
Branch	2,122	5,779	6,439	26,824	588	36,725	10,524	10,267	9,399	15,630
Calhoun	2,792	2,542	8,093	117,212	0	790,541	167,572	24,629	33,308	18,206
Cass	3,887	2,660	3,211	43,933	0	36,132	13,150	9,604	751	667
Charlevoix	7,048	0	7,270	22,640	0	27,583	9,903	2,568	70,704	46,461
Cheboygan	10,499	1,769	11,857	24,137	0	35,020	39,894	14,458	4,195	7,473
Chippewa	1,549	3,711	0	61,399	4,877	103,256	50,419	16,143	14,577	23,236
Clare	56	3,945	3,619	31,618	0	38,972	7,939	80,001	13,124	6,751
Clinton	0	0	4,955	34,359	0	57,289	33,883	2,253	117	2,148
Crawford	98	0	1,230	16,111	0	34,968	2,440	4,426	20,278	26,863
Delta	2,019	190	179,771	65,563	5,155	99,285	33,777	21,036	4,179	24,555
Dickinson	5,330	13,952	11,558	46,816	0	23,827	88,543	8,729	4,979	19,181
Eaton	102	10,113	25,122	37,732	0	146,930	69,128	38,766	28,784	36,626
Emmet	22,705	3,235	7,727	84,102	1,326	68,057	18,501	53,902	16,366	56,228
Genesee	11,302	79,284	83,744	393,557	0	1,259,103	316,227	495,985	17,929	63,642
Gladwin	2,508	0	3,579	19,426	0	48,919	2,786	10,724	2,313	2,525
Gogebic	0	2,078	617	26,086	0	17,630	12,052	15,561	18,817	18,081
Grand Traverse	12,103	25,408	19,937	93,963	0	435,150	134,527	85,457	102,873	183,732
Gratiot	0	5,099	7,090	23,987	0	92,131	46,148	2,973	490	11,645
Hillsdale	529	3,848	7,270	27,321	0	82,026	24,653	4,791	1,786	3,679
Houghton	4	1,979	0	42,371	11,711	31,316	19,700	18,005	6,719	15,756
Huron	7,699	8,413	2,705	31,514	0	66,365	15,630	9,250	15,768	6,686
Ingham	4,975	93,106	93,538	481,462	7,028	717,908	265,590	46,362	89,777	28,756
Ionia	0	0	1,337	25,848	0	35,884	32,734	1,991	3,859	3,269
Iosco	1,544	0	7,692	41,126	0	70,772	16,062	5,630	16,856	22,063
Iron	0	2,937	2,460	18,134	0	27,482	2,344	8,894	2,691	5,993
Isabella	0	4,743	12,645	57,023	0	180,769	175,359	20,721	19,463	37,791
Jackson	9,638	31,065	2,612	133,688	0	257,300	289,857	38,104	11,352	35,949
Kalamazoo	10,367	211,480	55,635	173,628	0	508,659	604,455	134,902	52,297	33,863
Kalkaska	1,657	0	155	10,853	0	43,801	2,272	6,075	328	4,447
Kent	76,040	157,471	792,961	417,620	5,531	1,744,390	370,312	1,080,982	276,861	238,217
Keweenaw	0	0	0	763	0	1,939	0	0	3,510	1,424
Lake	0	0	0	28,669	0	11,161	2,102	6,561	1,299	1,961
Lapeer	6,530	2,464	10,772	43,214	5,492	149,072	28,186	8,209	9,698	1,535

Leelanau	139	0	2,402	27,418	6,174	37,274	3,505	1,967	19,760	28,214
Lenawee	5,856	13,309	7,944	70,500	0	193,241	104,966	31,390	9,428	7,268
Livingston	10,064	6,531	8,306	65,504	0	173,285	167,237	31,107	986	22,939
Luce	204	0	0	6,246	0	14,103	1,452	3,282	1,633	2,287
Mackinac	1,222	193	0	18,066	0	43,953	3,583	9,671	82,838	21,029
Macomb	416,870	118,292	86,363	837,510	33,033	1,892,460	483,377	298,665	84,118	104,096
Manistee	1,433	9,256	9,409	36,779	313	35,483	17,977	6,667	4,071	26,546
Marquette	2,434	8,313	22,183	88,877	801	130,252	122,513	48,086	26,529	26,139
Mason	3,028	7,657	3,487	21,051	0	64,114	13,483	11,706	4,372	9,378
Mecosta	2,644	7,759	1,342	37,401	0	53,101	45,184	29,032	7,813	11,971
Menominee	0	0	3,214	32,636	0	37,008	19,122	3,554	0	10,502
Midland	2,316	44,040	20,956	47,783	0	167,383	25,500	22,440	29,392	42,995
Missaukee	2,398	0	0	16,053	0	7,849	3,312	2,805	262	2,182
Monroe	6,169	10,005	14,825	93,410	0	131,904	58,394	49,102	22,320	23,564
Montcalm	2,378	0	3,360	44,528	5,703	119,606	4,535	8,002	2,605	983
Montmorency	10,865	182	0	17,073	0	34,792	272	1,806	509	5,156
Muskegon	23,122	36,065	12,418	128,336	0	289,971	117,825	49,637	4,384	4,893
Newaygo	3,870	11,761	16,299	16,708	0	49,192	6,358	12,066	213	2,697
Oakland	45,753	859,963	580,977	1,220,199	92,723	4,234,495	2,055,679	1,645,935	666,722	418,990
Oceana	845	0	0	23,041	0	39,664	1,822	5,384	289	1,918
Ogemaw	1,158	1,614	4,985	21,025	0	50,137	16,223	4,377	1,897	1,730
Ontonagon	0	3,064	2,752	21,541	0	17,271	191	4,753	1,641	14,055
Osceola	0	0	0	17,615	0	33,511	10,580	4,954	3,703	1,333
Oscoda	0	0	0	10,345	0	16,071	6,638	3,240	1,277	1,715
Otsego	0	2,412	203	22,040	0	57,664	10,466	9,205	18,089	36,608
Ottawa	143,468	33,377	22,310	84,689	0	330,108	96,438	62,546	52,760	27,999
Presque Isle	0	4,255	1,515	26,161	0	24,200	1,744	183	5,061	2,260
Roscommon	802	4,368	2,177	29,277	0	48,650	27,638	6,028	10,321	12,213
Saginaw	6,636	126,002	192,782	208,993	1,873	822,315	52,424	66,738	51,256	65,482
St. Clair	6,430	6,150	230,864	121,345	12,337	335,565	118,891	50,911	97,001	61,511
St. Joseph	7,361	12,183	7,708	96,876	840	85,578	126,659	15,134	8,539	5,553
Sanilac	0	0	6,178	39,587	0	40,098	13,863	3,823	5,129	3,088
Schoolcraft	0	976	1,984	9,785	0	12,709	0	491	6,024	12,189
Shiawassee	0	7	6,713	39,662	0	119,346	27,963	51,060	728	8,493
Tuscola	14,765	6,272	2,907	46,293	0	42,489	18,890	7,992	534	3,007
Van Buren	2,166	1,619	79	63,861	0	79,466	28,512	7,438	807	13,059
Washtenaw	373	74,351	121,384	169,159	49,998	829,979	504,538	166,271	154,002	175,772
Wayne	226,773	601,822	1,331,863	1,969,946	17,845	5,080,437	1,674,177	371,753	353,654	490,882
Wexford	4,354	13,668	6,924	42,607	0	39,142	27,398	17,304	24,275	26,396
Out of state	16,031	1,153,371	5,076,150	219,925	17,804	5,868,119	3,513,498	1,170,243	1,681,989	1,297,529
Total	$1,261,042	$3,921,316	$9,289,700	$9,326,762	$283,546	$30,062,070	$13,196,383	$6,793,319	$4,453,483	$4,237,702

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-21. Sales and use tax collections by Michigan county by Business Classification Code, totals for 1988.

County	Watercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Hotel Dining Rooms (BCC 584)	Family Rest- aurants (BCC 585)	Fast Food Rest- aurants (BCC 586)	Sport- ing Goods (BCC 595)	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 7,249	$ 0	$ 3,576	$ 77,024	$ 0	$ 68,156	$ 3,333	$ 12,253	$ 6,055	$ 12,603
Alger	0	0	0	83,932	0	64,273	674	11,598	44,093	95,486
Allegan	317,569	48,412	31,474	396,310	15,452	490,053	107,037	51,268	61,648	126,481
Alpena	3,568	7,621	34,841	144,758	1,557	669,147	570,616	109,530	20,598	59,530
Antrim	85,724	0	4,111	90,713	0	181,693	20,788	65,739	206,440	296,994
Arenac	105,506	5,082	0	100,459	0	80,902	93,244	5,546	5,476	14,364
Baraga	0	0	5,739	33,323	0	34,152	27,052	6,552	10,294	15,381
Barry	5,855	7,267	4,331	75,141	0	214,007	65,924	116,634	2,589	6,556
Bay	166,996	677	161,095	417,829	0	1,332,234	431,035	258,238	16,023	62,179
Benzie	38,972	11,856	16,008	47,737	0	223,255	1,548	23,119	30,217	51,943
Berrien	248,810	120,733	99,564	745,379	0	1,328,161	1,741,166	251,814	163,577	287,795
Branch	111,242	16,254	36,995	103,189	5,499	223,384	63,427	56,183	37,517	68,649
Calhoun	43,238	7,308	32,514	450,932	0	3,102,590	664,084	105,484	151,903	100,171
Cass	59,986	7,365	16,415	192,432	0	130,794	55,160	48,775	2,219	9,733
Charlevcix	122,829	0	32,760	130,185	0	184,998	66,282	12,300	362,996	264,749
Cheboygan	100,958	7,733	32,677	108,987	0	183,430	169,352	51,952	20,042	74,866
Chippewa	22,510	9,717	0	237,210	17,551	493,626	174,381	54,901	77,700	165,736
Clare	637	10,849	17,262	121,041	0	166,286	38,965	173,696	57,330	28,304
Clinton	0	0	16,125	141,873	0	226,099	123,215	4,799	283	8,846
Crawford	2,755	0	8,486	65,511	0	139,745	21,137	22,582	92,940	148,080
Delta	18,982	389	535,266	254,548	24,415	435,888	144,941	73,216	22,046	124,749
Dickinson	13,360	41,499	37,983	184,371	2,594	90,510	360,596	21,417	15,964	78,578
Eaton	3,410	26,202	90,521	148,040	0	586,679	300,752	183,423	110,189	134,038
Emmet	231,220	10,493	48,638	434,110	7,483	445,569	124,082	187,790	166,732	505,949
Genesee	121,348	249,420	309,489	1,487,149	0	4,820,064	1,351,294	2,025,376	98,079	276,816
Gladwin	56,285	0	12,629	73,105	0	208,158	16,587	41,205	9,071	10,663
Gogebic	0	4,910	1,969	109,929	0	76,215	58,199	41,708	94,413	82,017
Grand Traverse	230,618	87,116	68,219	368,018	0	1,745,406	591,656	399,019	493,081	1,147,012
Gratiot	0	14,394	140,468	97,443	0	374,246	183,796	14,996	3,247	57,312
Hillsdale	6,709	8,991	31,866	112,030	0	335,442	105,637	18,835	9,264	14,193
Houghton	170	4,566	0	177,644	43,779	159,382	101,795	62,937	38,997	84,822
Huron	110,084	20,986	11,362	128,525	0	311,199	82,482	41,614	74,149	44,858
Ingham	75,302	305,791	328,482	1,780,471	26,672	2,897,936	1,020,725	222,157	397,569	125,870
Ionia	0	0	3,780	99,359	0	157,572	146,179	15,361	24,154	17,199
Iosco	30,690	0	27,663	169,967	0	343,873	73,471	23,257	87,994	131,462
Iron	0	7,054	12,573	69,374	0	119,799	11,797	29,690	8,221	19,716
Isabella	0	18,584	43,462	217,913	0	691,948	581,581	64,533	72,369	179,581
Jackson	179,093	70,512	9,745	524,927	0	1,043,466	1,163,402	140,691	58,666	155,476
Kalamazoo	135,357	657,293	219,316	705,442	0	1,924,581	2,473,957	606,546	190,456	256,529
Kalkaska	23,740	0	423	51,425	0	187,061	8,207	20,601	1,514	19,919
Kent	683,720	458,338	2,554,306	1,616,176	21,932	6,934,794	1,496,706	3,276,638	977,517	941,242
Keweenaw	0	0	0	3,512	0	14,689	0	0	25,008	19,433
Lake	122	0	0	108,332	0	49,006	19,330	20,113	5,787	9,038
Lapeer	88,595	8,149	34,260	165,385	19,709	565,255	111,284	24,900	36,492	7,561

Leelanau	1,509	0	10,806	139,169	34,357	244,509	26,657	13,609	132,042	240,763
Lenawee	5,856	37,578	[illegible],566	282,180	0	798,806	472,806	202,018	35,409	40,776
Livingston	147,135	17,128	[illegible],117	268,429	0	799,682	632,826	131,585	3,591	102,925
Luce	7,058	0	0	22,496	0	63,167	11,044	8,608	7,904	20,004
Mackinac	8,107	3,333	0	129,862	0	295,036	20,569	61,137	792,904	358,176
Macomb	2,671,375	321,420	316,153	3,334,021	94,445	7,597,747	1,872,454	1,237,292	308,607	399,419
Manistee	17,009	27,251	17,137	160,222	1,514	160,557	75,289	27,292	26,285	127,009
Marquette	39,642	22,899	81,929	348,060	3,324	521,518	499,622	147,368	122,593	128,219
Mason	37,012	20,616	16,221	92,901	0	305,979	71,329	52,250	30,471	95,022
Mecosta	39,846	21,474	7,054	137,425	0	222,103	190,556	95,629	33,958	55,469
Menominee	6,168	0	11,872	124,227	0	154,872	80,126	12,830	1,478	22,672
Midland	58,018	120,900	90,303	181,270	0	646,286	92,422	93,181	107,865	192,938
Missaukee	20,627	0	0	67,466	0	38,006	15,667	7,982	1,937	10,598
Monroe	99,841	30,909	54,116	403,391	0	564,979	256,482	163,599	75,613	114,605
Montcalm	13,844	0	13,678	178,974	22,638	462,094	34,110	38,537	12,034	3,541
Montmorency	46,793	951	0	65,279	0	166,476	4,268	5,681	5,895	25,937
Muskegon	176,656	103,083	44,309	518,045	0	1,235,005	461,814	393,912	37,695	38,942
Newaygo	62,800	38,163	57,062	60,501	0	227,025	35,308	38,595	3,328	11,217
Oakland	457,580	2,448,522	1,901,568	4,653,348	323,330	16,364,170	8,003,833	4,820,307	2,441,613	1,807,878
Oceana	10,936	0	0	103,309	0	147,071	33,259	19,742	11,496	28,120
Ogemaw	5,864	4,283	26,258	85,564	0	197,824	60,675	15,644	10,793	8,382
Ontonagon	0	8,444	8,209	81,345	0	72,510	3,310	11,560	8,368	55,894
Osceola	1,853	0	2,364	67,482	0	130,816	44,615	10,388	12,694	4,673
Oscoda	0	0	0	38,084	0	64,291	29,621	8,276	5,839	7,766
Otsego	0	4,603	2,035	100,622	0	274,942	41,161	24,140	74,416	196,886
Ottawa	829,091	124,090	92,883	359,340	0	1,421,245	389,153	362,792	247,373	179,295
Presque Isle	0	11,104	4,795	99,213	0	100,193	40,610	2,075	23,846	9,927
Roscommon	13,642	14,929	8,750	132,153	0	239,954	131,411	36,707	54,497	85,108
Saginaw	58,480	334,188	586,143	808,449	7,524	2,962,711	205,482	221,053	183,949	251,567
St. Clair	57,669	11,421	727,528	527,045	42,048	1,397,588	488,745	168,433	326,187	246,782
St. Joseph	50,068	33,694	28,529	388,015	3,797	383,264	454,309	59,803	44,104	28,670
Sanilac	0	0	27,429	159,277	0	184,850	55,295	15,079	21,584	18,440
Schoolcraft	0	3,874	8,626	38,252	0	55,335	44	3,407	26,775	80,881
Shiawassee	0	510	23,616	159,270	0	455,694	106,714	160,284	4,438	31,235
Tuscola	164,510	16,041	10,440	176,594	0	178,337	80,305	72,802	2,051	12,275
Van Buren	63,623	7,477	2,895	289,973	0	363,368	157,688	37,795	21,515	87,420
Washtenaw	18,949	220,402	406,622	712,849	184,021	3,266,028	1,643,176	557,5[illegible]6	376,193	666,774
Wayne	1,662,845	1,687,186	4,133,627	7,692,398	68,657	19,286,845	6,969,332	1,542,[illegible]3	1,374,513	2,208,216
Wexford	29,691	41,356	28,631	176,600	0	166,554	75,637	56,390	96,843	135,764
Out of state	135,769	3,189,391	15,024,172	509,808	106,940	21,987,306	13,746,988	3,423,860	5,914,076	5,496,106
Total	$10,473,075	$11,182,781	$28,920,836	$36,724,068	$1,079,238	$118,260,466	$52,581,588	$23,360,157	$17,413,691	$19,978,770

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-22. Sales and use tax collections by Michigan county by Business Classification Code, First Quarter 1989.

County	Watercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Hotel Dining Rooms (BCC 584)	Family Rest- aurants (BCC 585)	Fast Food Rest- aurants (BCC 586)	Sport- ing Goods (BCC 595)	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 0	$ 0	$ 322	$ 13,247	$ 0	$ 6,218	$ 0	$ 862	$ 13	$ 363
Alger	0	0	120	16,864	0	17,405	236	3,005	4,584	24,324
Allegan	20,447	8,124	6,792	64,164	248	112,219	15,608	9,694	10,974	13,082
Alpena	0	1,128	6,542	35,228	0	143,976	123,555	17,049	3,464	10,531
Antrim	1,277	0	120	16,956	0	31,627	2,553	15,548	44,036	53,976
Arenac	16,544	679	0	19,468	0	11,306	16,094	686	1,018	2,070
Baraga	0	0	1,116	7,211	0	6,488	3,698	1,478	4,373	4,851
Barry	1,036	1,291	673	16,950	0	45,366	7,771	21,599	0	1,353
Bay	50,024	91	37,920	99,909	0	304,139	99,782	51,746	4,245	11,808
Benzie	1,274	1,832	2,182	8,835	0	42,445	290	2,078	4,134	4,965
Berrien	54,395	22,688	20,469	158,746	0	273,174	406,267	36,908	44,008	48,070
Branch	5,465	2,747	8,684	23,428	432	32,868	11,138	5,251	9,534	12,859
Calhoun	4,997	1,344	6,833	117,517	0	700,394	152,118	19,090	33,897	16,901
Cass	3,894	1,377	1,775	39,037	0	33,694	13,474	12,625	409	490
Charlevoix	4,786	0	3,425	20,716	0	25,551	10,181	1,585	162,054	86,401
Cheboygan	12,659	1,443	794	23,359	0	23,330	33,380	8,025	3,798	5,984
Chippewa	6,312	1,566	0	50,269	13,443	69,754	50,591	10,323	9,160	16,256
Clare	4,074	2,013	2,667	24,466	0	31,865	7,130	30,238	11,885	4,778
Clinton	0	0	3,008	34,249	0	55,131	29,425	785	86	1,987
Crawford	0	0	689	15,077	0	26,773	1,962	4,257	20,580	30,329
Delta	1,211	49	117,912	60,822	4,319	88,398	29,886	11,122	11,413	10,095
Dickinson	2,078	8,853	6,829	40,934	0	21,223	76,564	5,276	6,782	14,802
Eaton	31,530	5,145	16,912	39,178	0	137,599	66,947	30,852	26,614	36,297
Emmet	24,497	136	5,431	77,214	1,628	66,121	22,729	47,094	23,453	56,358
Genesee	16,902	48,559	43,022	392,532	0	1,161,877	294,273	385,973	18,834	66,622
Gladwin	5,276	0	1,506	15,068	0	41,274	1,879	8,186	1,654	2,122
Gogebic	0	1,159	240	33,309	0	16,881	12,447	21,417	47,143	34,062
Grand Traverse	35,065	14,520	12,509	95,031	0	378,967	114,243	59,736	72,600	135,767
Gratiot	0	2,716	4,268	23,742	0	84,471	42,177	1,493	1,024	9,957
Hillsdale	494	1,461	7,153	25,250	0	75,017	28,589	2,882	0	3,367
Houghton	0	818	0	43,573	9,608	28,785	19,381	10,877	5,632	15,548
Huron	12,753	3,786	2,364	27,740	0	28,652	13,759	4,587	12,010	5,284
Ingham	18,624	49,031	71,572	456,479	5,379	687,773	268,140	49,900	96,574	25,547
Ionia	0	0	612	24,332	0	33,808	30,460	1,166	2,404	2,824
Iosco	2,634	0	5,182	32,963	0	49,842	14,846	3,449	12,288	17,720
Iron	0	1,330	1,714	15,709	0	22,833	2,202	11,261	2,555	2,736
Isabella	0	3,382	12,146	56,293	0	161,915	159,236	12,911	16,112	38,194
Jackson	42,884	16,543	2,001	126,133	0	235,846	265,152	29,782	11,385	36,390
Kalamazoo	8,930	148,396	42,012	157,686	0	492,606	559,174	122,027	36,368	19,839
Kalkaska	17,849	0	94	11,082	0	29,372	2,604	2,719	768	2,913
Kent	137,396	101,132	585,961	447,175	5,180	1,601,763	327,679	677,691	250,635	260,541
Keweenaw	0	0	0	688	0	2,537	0	0	4,500	1,079
Lake	0	0	0	19,326	0	7,139	1,668	1,946	1,039	1,191
Lapeer	21,917	1,323	5,872	45,700	5,375	138,119	22,138	2,418	7,864	1,504

Leelanau	0	0	1,080	23,226	3,693	30,196	2,874	980	30,946	35,458
Lenawee	15,931	7,709	6,121	67,476	0	189,617	107,829	13,709	7,605	4,677
Livingston	17,020	2,705	4,789	63,391	0	111,675	221,084	21,397	640	14,301
Luce	0	0	0	7,699	0	13,804	640	1,014	1,006	2,631
Mackinac	501	0	0	11,965	0	32,474	1,017	7,663	4,132	4,516
Macomb	739,506	60,515	63,775	777,311	26,737	1,739,946	484,712	232,935	70,297	110,412
Manistee	582	4,667	1,462	33,128	365	25,986	13,976	2,613	4,346	18,089
Marquette	6,466	2,956	17,206	85,658	0	118,695	112,957	31,817	19,048	31,087
Mason	2,875	3,628	3,807	21,435	0	44,623	10,762	6,559	3,514	4,250
Mecosta	1,055	4,436	270	34,393	0	56,034	36,892	2,810	7,831	11,562
Menominee	0	0	2,411	29,945	0	32,820	15,235	1,665	241	2,501
Midland	6,072	22,413	16,517	45,326	0	148,794	24,294	17,048	22,582	47,493
Missaukee	2,784	0	0	11,494	0	13,675	565	1,125	206	1,360
Monroe	13,173	6,218	17,298	92,555	0	128,054	61,848	40,538	16,666	18,293
Montcalm	8,890	0	2,184	33,892	4,043	121,976	4,695	4,674	2,601	708
Montmorency	10,364	16	0	12,473	0	26,798	971	467	1,124	4,497
Muskegon	76,741	18,529	8,976	127,609	0	263,318	140,708	37,277	7,308	4,720
Newaygo	6,009	6,890	10,313	13,486	0	39,624	5,638	4,778	853	1,476
Oakland	72,436	496,986	413,918	1,159,185	76,880	3,798,515	2,063,350	871,347	549,014	403,530
Oceana	414	0	0	19,106	0	22,000	1,759	3,120	116	736
Ogemaw	1,085	619	4,325	22,746	0	36,200	14,682	1,762	607	1,203
Ontonagon	0	1,208	1,278	19,756	0	17,223	0	2,983	2,304	16,778
Osceola	0	0	544	13,779	0	28,713	9,271	2,091	2,993	870
Oscoda	0	0	0	7,912	0	10,310	4,846	721	1,428	1,030
Otsego	0	888	489	16,578	0	63,861	13,511	7,873	20,883	48,473
Ottawa	86,822	25,233	18,645	79,402	0	316,648	87,812	75,258	42,740	24,289
Presque Isle	0	2,225	782	24,442	0	16,072	382	73	2,131	2,045
Roscommon	933	2,083	1,249	30,021	0	57,180	28,072	23,244	8,215	13,472
Saginaw	6,644	31,487	124,956	189,736	1,995	610,458	59,689	46,295	17,887	43,016
St. Clair	3,817	6,849	142,248	117,017	9,925	303,136	113,849	27,640	58,456	43,366
St. Joseph	9,162	6,830	5,884	50,074	902	78,186	120,219	12,770	4,962	3,976
Sanilac	0	0	3,547	32,736	0	67,404	11,932	1,604	4,633	2,903
Schoolcraft	0	735	1,402	10,229	0	8,268	0	360	4,645	7,615
Shiawassee	0	0	3,839	37,991	0	105,918	25,290	30,861	491	7,960
Tuscola	36,049	2,492	1,707	43,302	0	28,438	16,273	14,222	96	2,207
Van Buren	7,157	1,197	36	55,523	0	67,482	27,768	4,766	3,094	6,645
Washtenaw	41	40,402	77,212	173,593	41,437	834,207	450,903	85,484	157,987	157,293
Wayne	203,437	339,209	849,197	1,944,416	15,532	4,589,891	1,651,038	293,283	413,001	524,988
Wexford	1,646	6,841	5,908	43,436	0	33,170	22,318	8,555	32,372	33,926
Out of state	19,528	665,478	3,131,544	260,498	11,901	5,415,747	2,986,579	845,187	1,328,015	1,271,886
Total	$1,924,364	$2,226,106	$5,994,362	$8,917,595	$239,022	$27,233,677	$12,317,666	$4,546,165	$3,898,919	$4,088,375

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-23. Sales and use tax collections by Michigan county by Business Classification Code, Second Quarter 1989.

County	Watercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Hotel Dining Rooms (BCC 584)	Family Rest- aurants (BCC 585)	Fast Food Rest- aurants (BCC 586)	Sport- ing Goods (BCC 595)	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 4,804	$ 0	$ 1,201	$ 18,139	$ 0	$ 13,644	$ 1,055	$ 2,394	$ 1,242	$ 1,733
Alger	0	0	437	18,377	0	17,178	900	3,331	8,148	23,428
Allegan	126,736	9,442	7,513	103,997	5,853	149,331	31,310	18,065	16,678	29,047
Alpena	2,071	1,352	9,168	37,852	0	181,837	149,836	30,918	6,693	15,980
Antrim	51,671	0	698	23,472	0	59,790	2,521	13,489	34,864	47,538
Arenac	36,551	867	0	27,572	0	21,611	23,277	1,231	1,486	3,459
Baraga	0	0	1,756	9,057	0	8,237	8,943	1,469	4,795	5,459
Barry	2,248	1,400	941	17,692	0	54,076	15,101	23,686	474	2,061
Bay	56,353	0	37,470	112,469	0	346,546	124,058	91,392	3,508	16,147
Benzie	14,035	2,243	3,302	15,996	0	52,026	456	4,291	6,396	8,524
Berrien	96,542	26,738	26,826	190,587	0	368,939	476,090	69,890	63,610	76,106
Branch	62,025	2,982	13,217	23,564	1,379	42,535	21,925	21,762	12,946	16,338
Calhoun	25,601	1,360	7,204	140,125	0	782,749	195,787	35,143	47,865	21,491
Cass	23,602	1,569	4,975	53,144	0	31,869	18,868	28,539	788	2,231
Charlevoix	53,664	0	5,134	28,210	0	38,586	20,614	2,593	47,845	46,697
Cheboygan	63,665	1,629	875	28,117	0	46,706	52,804	14,912	3,901	12,389
Chippewa	18,766	1,391	0	61,106	16,584	104,673	61,931	14,781	19,113	28,419
Clare	8,581	2,735	4,074	30,083	0	44,015	13,180	43,469	13,781	7,296
Clinton	0	0	3,952	35,292	0	61,962	31,954	997	126	2,425
Crawford	2,031	0	1,248	15,874	0	37,630	5,973	6,133	23,963	36,136
Delta	12,073	60	142,691	67,062	5,960	105,503	37,481	24,092	4,418	31,151
Dickinson	3,237	9,245	9,038	47,612	0	25,464	97,525	1,904	5,280	19,915
Eaton	34,598	6,565	25,153	41,290	0	150,857	83,219	66,826	28,097	38,739
Emmet	126,667	1,943	10,755	91,538	1,511	127,952	40,745	24,246	24,112	91,091
Genesee	57,571	55,979	58,725	385,901	0	1,250,920	385,407	695,859	20,068	85,829
Gladwin	39,430	0	2,766	17,911	779	64,845	3,904	10,719	2,374	2,885
Gogebic	0	1,201	532	23,745	0	21,469	14,001	3,983	8,517	13,952
Grand Traverse	115,441	18,284	17,494	106,109	0	457,381	150,664	127,142	117,675	279,976
Gratiot	0	3,485	5,654	25,341	0	90,182	54,108	3,686	541	10,962
Hillsdale	1,254	1,974	7,593	28,019	0	90,486	66,311	5,960	1,220	3,467
Houghton	0	1,269	0	38,564	9,540	42,121	25,499	23,780	10,494	17,306
Huron	37,205	4,807	3,129	30,420	0	50,510	27,889	15,581	18,992	10,503
Ingham	32,738	61,755	69,227	465,656	6,128	749,353	338,030	98,709	87,007	31,561
Ionia	0	0	1,129	27,002	0	40,689	40,713	5,859	6,722	4,475
Iosco	5,097	0	8,272	37,641	0	72,334	18,952	6,689	18,484	33,925
Iron	0	1,303	2,311	15,750	0	28,872	4,474	6,135	6,772	5,193
Isabella	0	3,844	13,605	56,555	0	198,963	181,545	13,484	17,965	56,866
Jackson	104,410	18,642	2,864	142,527	0	268,375	325,971	40,676	13,074	44,174
Kalamazoo	63,829	157,794	46,958	168,197	0	529,871	680,247	249,987	41,163	20,604
Kalkaska	38,360	0	82	12,762	0	38,599	4,128	4,504	1,607	3,061
Kent	185,940	113,788	635,538	455,534	7,548	1,737,229	398,959	812,590	281,008	277,218
Keweenaw	0	0	0	828	0	4,824	0	0	3,942	2,269
Lake	0	0	0	26,670	0	13,068	3,955	5,112	1,625	2,620
Lapeer	39,227	1,304	7,954	46,148	7,214	163,962	30,996	3,257	9,688	2,075

Leelanau	1,065	0	3,523	37,865	9,423	59,317	6,778	3,896	20,455	34,351
Lenawee	62,613	9,579	7,460	73,265	0	230,049	141,569	22,759	9,323	5,359
Livingston	84,979	3,768	7,698	77,046	0	148,475	273,375	45,173	1,004	18,168
Luce	1,602	0	0	4,707	0	17,992	289	1,085	1,037	3,611
Mackinac	1,852	810	0	36,704	0	77,815	5,652	22,594	241,957	95,771
Macomb	1,385,359	57,967	89,544	857,141	32,437	1,972,417	588,010	418,605	84,509	135,401
Manistee	7,974	5,803	1,496	44,343	318	34,991	19,510	7,397	8,770	23,039
Marquette	24,430	5,296	19,847	89,363	0	140,014	139,058	25,599	31,933	32,727
Mason	9,558	3,759	2,142	24,360	0	75,682	21,725	13,583	6,948	18,886
Mecosta	14,677	5,843	472	37,478	0	66,656	48,755	5,577	6,168	12,188
Menominee	0	0	2,292	34,473	0	43,179	17,807	2,792	575	4,762
Midland	28,268	26,959	18,590	48,775	0	173,072	28,696	24,517	25,850	53,738
Missaukee	13,292	0	0	16,270	0	23,767	2,306	2,261	429	2,616
Monroe	36,073	7,498	13,153	110,679	0	166,626	87,243	33,919	16,501	30,679
Montcalm	23,929	0	2,629	36,358	6,314	142,811	13,290	5,807	3,078	1,123
Montmorency	20,551	119	0	14,956	0	49,054	1,846	707	2,339	6,478
Muskegon	139,308	19,041	7,236	134,537	0	326,113	168,911	74,403	9,825	17,186
Newaygo	20,375	6,916	11,315	18,185	0	52,005	10,523	9,038	411	3,120
Oakland	232,305	551,315	456,480	1,175,850	83,440	4,116,009	2,461,459	1,191,429	604,726	496,605
Oceana	1,927	0	0	28,838	0	38,668	8,151	4,273	2,615	6,935
Ogemaw	3,224	1,029	6,340	18,733	0	54,691	21,522	3,973	2,067	1,636
Ontonagon	0	1,615	1,948	19,451	0	19,276	1,027	2,899	2,184	14,198
Osceola	0	0	854	17,964	0	37,995	13,512	1,365	3,174	1,080
Oscoda	44	0	0	10,014	0	15,260	7,853	2,410	1,154	2,209
Otsego	0	1,901	878	16,314	0	73,865	15,702	5,691	24,746	42,805
Ottawa	274,655	25,527	22,000	90,524	0	424,405	127,660	137,794	84,901	89,134
Presque Isle	0	2,491	2,567	24,782	0	24,655	1,131	194	3,711	3,688
Roscommon	13,120	3,642	2,260	32,846	0	77,130	41,347	24,529	13,101	18,237
Saginaw	21,130	40,125	116,573	194,157	1,859	735,373	87,636	37,013	26,770	75,690
St. Clair	26,274	6,277	175,161	145,870	12,135	366,676	150,333	49,021	84,470	63,287
St. Joseph	18,036	7,941	6,403	59,464	975	104,887	151,203	19,046	8,079	7,818
Sanilac	0	0	6,741	41,732	0	85,938	16,055	3,853	5,894	4,477
Schoolcraft	0	1,141	1,880	9,192	0	15,065	0	811	7,607	18,647
Shiawassee	0	200	6,678	39,481	0	125,012	31,484	40,103	1,229	9,159
Tuscola	82,497	3,287	2,091	45,961	0	41,888	21,174	36,683	390	3,196
Van Buren	36,470	1,572	1,344	82,412	0	87,349	44,963	11,061	9,382	18,938
Washtenaw	432	49,546	92,541	186,899	49,053	882,449	462,250	190,261	193,078	237,458
Wayne	713,611	371,189	1,051,976	2,051,588	16,505	4,990,611	1,972,952	495,060	539,593	772,380
Wexford	9,847	8,720	7,620	45,377	0	41,118	28,237	13,071	22,720	29,411
Out of state	36,969	715,415	3,916,733	249,239	9,042	5,821,180	3,459,083	895,347	1,599,717	1,510,644
Total	$4,892,469	$2,463,241	$7,267,926	$9,632,700	$283,997	$30,767,304	$14,971,383	$6,564,864	$4,761,487	$5,419,556

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-24. Sales and use tax collections by Michigan county by Business Classification Code, Third Quarter 1989.

County	Watercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Hotel Dining Rooms (BCC 584)	Family Rest- aurants (BCC 585)	Fast Food Rest- aurants (BCC 586)	Sport- ing Goods (BCC 595)	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 2,930	$ 0	$ 1,630	$ 22,049	$ 0	$ 23,372	$ 1,529	$ 4,741	$ 4,425	$ 7,919
Alger	0	0	427	23,133	0	36,337	1,478	3,494	11,570	52,278
Allegan	84,239	14,638	8,290	138,289	8,796	175,375	34,311	16,517	24,392	53,077
Alpena	1,819	1,537	9,702	39,199	0	209,303	157,070	26,118	12,848	28,314
Antrim	25,428	0	1,893	35,591	0	89,206	3,475	27,829	70,158	130,379
Arenac	28,675	4,021	0	35,873	0	30,165	30,537	1,496	2,048	6,238
Baraga	0	0	1,670	9,450	0	11,452	9,593	1,830	6,594	13,053
Barry	2,678	1,472	978	18,388	0	61,257	14,013	32,331	1,787	2,904
Bay	81,075	0	37,770	109,803	0	373,135	128,723	64,216	4,782	21,786
Benzie	14,938	5,694	7,055	27,654	0	104,609	1,218	11,260	18,778	29,847
Berrien	79,463	26,771	25,538	216,749	0	395,488	531,681	58,823	79,069	212,747
Branch	47,156	3,440	10,490	24,177	2,277	46,125	16,116	17,836	14,152	19,518
Calhoun	17,639	1,637	6,582	136,022	0	809,614	161,244	36,978	54,683	39,029
Cass	18,082	1,481	6,500	58,866	0	38,204	17,943	24,448	1,360	4,975
Charlevoix	65,938	0	8,031	60,714	0	85,195	32,777	6,616	111,919	132,742
Cheboygan	91,873	3,275	0	37,602	0	82,527	72,734	15,375	7,269	38,105
Chippewa	21,472	1,750	0	74,585	21,131	191,607	81,331	17,844	35,536	70,213
Clare	5,301	2,449	3,857	34,033	0	52,178	14,642	67,157	16,630	9,940
Clinton	0	0	4,092	38,138	0	71,342	33,569	1,723	275	3,026
Crawford	896	0	1,818	18,675	0	55,869	9,274	6,421	26,429	58,450
Delta	5,792	74	154,355	70,678	6,485	139,845	56,474	20,601	6,832	56,555
Dickinson	6,411	7,763	9,485	54,282	0	27,446	107,774	3,610	8,569	33,026
Eaton	28,642	6,185	19,162	39,349	0	148,799	84,324	46,796	25,594	41,525
Emmet	100,724	5,379	18,289	208,508	2,301	288,422	72,351	58,197	70,270	331,169
Genesee	23,495	46,071	54,703	375,426	0	1,260,636	377,526	576,181	21,659	98,160
Gladwin	21,524	0	2,724	24,555	1,446	80,338	4,314	14,091	2,423	3,349
Gogebic	0	1,492	540	29,583	0	29,998	16,806	5,962	12,466	31,856
Grand Traverse	77,208	28,858	26,726	153,720	0	614,886	212,060	142,815	195,887	623,924
Gratiot	0	3,024	5,705	25,194	0	81,423	58,416	4,558	557	13,318
Hillsdale	2,468	3,092	8,536	32,494	0	97,837	67,437	8,190	975	5,161
Houghton	4,623	514	0	42,593	10,053	54,519	29,321	16,854	18,667	36,027
Huron	27,914	5,576	2,718	33,953	0	76,229	38,108	21,357	30,787	22,699
Ingham	20,413	53,090	71,131	452,052	3,990	719,289	323,014	76,717	74,591	40,150
Ionia	0	0	1,004	27,347	0	41,751	49,654	4,451	8,415	5,352
Iosco	6,596	0	9,044	44,329	0	109,002	25,376	12,669	33,236	80,950
Iron	0	1,512	2,741	18,142	0	34,779	6,487	5,642	6,542	12,536
Isabella	0	4,284	13,050	57,686	0	224,500	196,150	17,584	16,519	57,515
Jackson	53,447	16,462	1,848	143,614	0	264,528	329,788	36,970	19,838	44,106
Kalamazoo	38,439	173,078	46,385	185,239	0	551,194	690,447	201,502	44,379	20,501
Kalkaska	52,651	0	31	17,792	0	49,603	4,274	7,357	2,553	5,618
Kent	211,685	106,090	626,564	433,617	10,809	1,741,708	403,083	806,490	265,049	287,993
Keweenaw	0	0	0	1,360	0	21,192	579	0	15,294	15,322
Lake	0	0	0	33,149	0	15,597	5,829	5,706	2,361	17,244
Lapeer	20,409	1,879	8,741	46,095	8,130	164,696	36,120	5,218	12,844	2,799

Leelanau	1,320	0	7,554	62,420	19,889	151,657	18,295	9,675	65,754	154,389
Lenawee	31,413	8,244	8,457	75,685	0	239,390	144,673	28,563	10,946	15,015
Livingston	39,096	3,323	5,896	83,341	0	160,104	293,329	39,030	1,013	22,100
Luce	6,104	0	0	6,842	0	32,481	0	1,715	3,116	11,868
Mackinac	3,681	3,681	0	71,619	0	179,728	11,436	21,202	609,722	312,373
Macomb	866,015	57,636	64,549	873,080	22,853	2,042,538	612,500	349,344	83,261	148,460
Manistee	8,266	7,355	911	57,994	537	47,017	27,637	10,638	22,182	49,650
Marquette	9,273	5,661	22,752	97,401	0	156,036	163,673	28,823	42,535	57,305
Mason	11,629	5,193	3,934	21,830	0	127,933	31,731	19,628	14,721	57,259
Mecosta	13,687	6,534	837	36,230	0	78,899	49,403	7,443	4,765	15,822
Menominee	0	0	2,123	34,378	0	48,641	19,106	4,008	797	9,159
Midland	19,383	23,798	19,567	49,428	0	180,974	31,510	29,561	21,948	62,453
Missaukee	9,411	0	0	19,512	0	28,818	2,847	3,028	1,446	5,183
Monroe	36,192	6,868	5,414	109,777	0	139,157	85,228	46,076	17,003	35,569
Montcalm	15,724	0	2,756	38,422	7,063	155,648	13,835	8,708	2,989	1,363
Montmorency	14,640	32	0	17,741	0	96,487	1,933	2,004	3,004	11,644
Muskegon	128,230	21,117	7,339	138,161	0	349,393	197,838	67,263	18,425	46,073
Newaygo	16,404	8,671	14,848	19,190	0	61,893	10,239	12,317	1,288	4,047
Oakland	128,237	480,132	462,746	1,180,747	68,762	4,111,424	2,399,201	1,231,246	589,881	444,786
Oceana	3,590	0	0	34,355	0	48,204	15,656	7,550	9,443	20,919
Ogemaw	4,136	997	6,794	20,851	0	72,057	28,280	5,704	4,964	2,961
Ontonagon	0	2,618	2,652	24,063	0	27,632	1,521	3,535	4,281	22,077
Osceola	0	0	974	18,718	0	41,588	17,132	2,003	2,996	1,222
Oscoda	20	0	0	14,499	0	20,944	11,019	3,433	2,681	3,257
Otsego	0	2,163	637	20,800	0	112,429	20,594	10,023	34,217	86,605
Ottawa	240,408	33,154	26,448	97,110	0	475,578	151,217	96,633	114,774	132,787
Presque Isle	0	3,061	3,047	26,703	0	39,652	2,041	751	6,311	9,196
Roscommon	13,853	5,031	2,862	44,538	0	121,181	87,846	27,999	24,559	50,217
Saginaw	16,476	32,777	145,154	190,509	3,141	852,909	121,324	47,986	35,541	127,437
St. Clair	27,992	11,895	176,547	165,775	12,572	419,477	148,119	51,935	97,608	83,357
St. Joseph	17,240	7,984	7,705	60,068	1,005	117,179	156,814	18,672	14,340	21,849
Sanilac	0	0	9,106	49,124	0	100,456	17,806	5,178	8,932	8,128
Schoolcraft	0	1,580	2,601	11,659	0	25,310	0	1,518	13,949	55,308
Shiawassee	0	277	6,787	38,409	0	119,286	33,854	34,900	1,031	11,215
Tuscola	50,107	3,247	2,314	47,179	0	40,649	24,283	20,440	1,394	2,856
Van Buren	22,080	1,976	1,072	105,023	0	111,155	51,420	11,561	22,836	46,526
Washtenaw	137	50,628	100,126	195,328	39,264	894,021	453,609	142,864	137,663	317,269
Wayne	260,985	353,964	898,929	1,977,143	13,646	4,921,141	1,936,613	452,737	419,981	648,942
Wexford	11,147	8,782	10,108	53,944	0	49,405	34,491	16,446	30,427	56,467
Out of state	22,913	688,604	3,986,529	308,691	16,126	6,474,499	3,719,364	814,396	1,732,229	1,737,973
Total	$3,341,832	$2,379,571	$7,239,880	$10,208,034	$280,276	$33,253,547	$15,696,387	$6,259,107	$5,635,964	$7,732,481

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-25. Sales and use tax collections by Michigan county by Business Classification Code, Fourth Quarter 1989.

County	Watercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Hotel Dining Rooms (BCC 584)	Family Rest-aurants (BCC 585)	Fast Food Rest-aurants (BCC 586)	Sport-ing Goods (BCC 595)	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 481	$ 0	$ 1,102	$ 24,635	$ 0	$ 13,109	$ 0	$ 3,019	$ 879	$ 1,490
Alger	0	0	256	17,382	0	18,889	223	3,480	2,906	24,630
Allegan	13,853	13,079	6,634	66,939	2,313	115,066	13,900	8,234	14,882	12,497
Alpena	280	3,162	10,289	38,753	0	162,561	158,651	28,734	8,947	13,603
Antrim	6,427	0	740	19,345	0	38,711	2,699	11,903	48,034	58,067
Arenac	11,201	0	0	27,123	0	15,935	22,434	2,530	1,387	2,503
Baraga	0	0	1,768	9,043	0	7,141	5,647	2,254	4,177	6,093
Barry	1,250	2,525	787	18,530	0	56,120	9,799	42,407	533	1,281
Bay	23,813	0	41,475	105,001	0	333,504	106,834	43,678	4,507	12,247
Benzie	1,057	2,623	3,183	12,434	0	46,368	80	6,079	4,724	8,665
Berrien	25,245	37,481	23,566	170,647	0	292,737	432,030	50,467	50,536	54,616
Branch	3,602	5,440	5,992	24,095	558	38,349	10,190	9,662	11,640	12,559
Calhoun	5,267	3,013	6,456	134,145	0	758,110	174,908	26,772	28,613	25,096
Cass	4,967	2,322	436	41,707	0	32,949	12,947	17,542	344	0
Charlevoix	8,914	0	5,263	27,983	0	31,734	11,756	2,640	79,665	42,784
Cheboygan	10,812	3,320	0	27,435	0	29,553	38,442	18,765	4,601	11,101
Chippewa	4,155	1,997	114	55,066	13,885	94,479	64,646	20,748	16,704	16,719
Clare	3,966	3,955	3,446	32,002	0	40,045	8,658	91,443	15,456	7,116
Clinton	0	0	4,830	42,195	0	62,596	44,510	1,660	133	2,802
Crawford	175	0	1,185	14,319	0	32,364	2,582	4,495	20,044	33,022
Delta	3,745	205	229,090	63,472	5,506	104,291	51,500	25,938	4,115	24,809
Dickinson	4,547	10,149	10,662	52,517	0	24,344	88,036	9,140	10,151	22,352
Eaton	3,142	10,688	24,814	43,684	0	141,150	80,640	44,679	39,404	48,160
Emmet	17,021	2,913	7,537	85,905	1,311	97,523	27,123	66,127	10,416	69,621
Genesee	6,322	88,125	49,258	400,533	0	1,255,152	340,662	522,859	22,744	86,787
Gladwin	2,356	0	3,170	24,124	441	56,421	1,235	12,018	2,043	2,735
Gogebic	0	2,014	588	27,691	0	22,525	13,257	17,695	20,394	17,995
Grand Traverse	36,095	24,345	24,447	105,894	0	435,320	140,040	104,621	115,416	213,303
Gratiot	0	3,802	6,509	23,532	0	74,129	46,419	2,970	602	9,643
Hillsdale	771	5,267	8,366	34,191	0	79,029	42,148	5,703	1,005	3,022
Houghton	528	425	0	38,188	9,113	39,934	19,139	22,504	8,440	16,508
Huron	5,810	8,287	2,517	31,993	0	33,607	25,564	16,973	17,517	6,741
Ingham	9,915	90,369	81,211	471,918	2,481	709,229	287,167	67,788	85,736	27,248
Ionia	0	0	1,218	22,437	0	40,417	42,298	2,439	2,494	2,877
Iosco	609	0	6,861	37,556	0	50,883	16,066	5,469	17,894	24,411
Iron	0	2,873	2,275	19,256	0	27,613	3,035	11,303	7,530	8,321
Isabella	0	4,929	14,483	59,425	0	190,052	179,226	21,898	17,978	42,715
Jackson	15,909	40,030	2,303	136,440	0	250,731	304,060	31,232	12,319	38,350
Kalamazoo	7,471	221,565	42,139	187,255	0	538,906	658,301	150,188	18,361	10,215
Kalkaska	6,069	0	0	16,282	0	40,419	1,941	5,541	1,507	4,322
Kent	58,443	159,084	779,709	441,065	14,736	1,695,124	356,413	1,042,375	283,610	237,627
Keweenaw	0	0	0	1,025	0	3,460	204	0	4,494	2,409
Lake	111	0	0	32,402	0	10,639	2,978	5,627	1,844	1,838
Lapeer	5,577	2,907	7,863	45,397	7,509	154,099	31,373	3,883	12,050	1,625

Leelanau	45	0	2,880	25,657	6,382	56,394	3,840	2,181	18,639	33,700
Lenawee	4,855	12,789	7,488	72,181	0	219,190	121,553	30,048	8,577	9,290
Livingston	8,382	6,849	3,827	70,942	0	152,028	236,435	40,319	406	13,727
Luce	190	0	0	9,335	0	17,759	57	2,219	1,209	2,147
Mackinac	907	243	0	19,682	0	49,282	4,284	11,326	93,816	30,508
Macomb	416,071	104,347	59,161	840,622	11,517	2,247,306	740,809	312,424	82,473	123,352
Manistee	1,865	12,572	404	38,253	547	30,926	20,139	8,340	12,073	19,572
Marquette	2,098	7,512	24,689	93,068	0	124,467	111,434	46,840	34,980	27,118
Mason	2,314	7,242	3,176	19,563	0	67,338	13,603	11,408	4,315	9,708
Mecosta	909	7,141	408	44,531	0	59,295	46,014	4,326	4,732	10,625
Menominee	0	0	2,130	30,441	0	41,390	16,215	1,635	912	10,913
Midland	3,414	42,473	19,114	49,617	0	170,420	35,888	24,722	27,809	49,179
Missaukee	3,435	0	0	15,864	0	21,107	534	2,653	463	5,648
Monroe	9,003	9,233	6,147	92,504	0	117,530	69,748	47,729	17,819	26,692
Montcalm	5,141	0	2,758	35,008	5,619	135,407	5,069	9,691	1,666	1,850
Montmorency	9,734	17	0	16,014	0	37,073	289	2,342	1,664	6,118
Muskegon	34,329	34,564	6,451	133,341	0	292,413	166,672	45,283	12,917	11,913
Newaygo	4,798	11,277	14,957	16,667	0	50,730	5,474	12,965	961	2,605
Oakland	53,228	773,096	546,382	1,272,902	88,460	4,134,718	2,217,674	1,712,937	716,716	353,045
Oceana	75	0	0	24,030	0	27,809	2,849	6,183	750	1,843
Ogemaw	1,174	1,408	4,199	23,585	0	48,760	17,142	4,894	1,192	1,978
Ontonagon	0	3,221	2,837	22,814	0	17,933	267	7,428	2,660	17,813
Osceola	0	0	0	17,027	0	38,708	12,007	5,355	3,126	798
Oscoda	1	0	0	15,248	0	15,133	5,568	3,550	986	2,301
Otsego	10	3,071	400	18,992	0	67,207	17,118	8,430	19,825	40,093
Ottawa	68,328	32,923	21,390	75,288	0	367,650	118,505	76,930	66,661	49,056
Presque Isle	0	4,042	3,217	25,111	0	22,212	1,102	5	3,373	4,104
Roscommon	3,406	4,754	1,942	29,704	0	62,378	59,215	7,560	9,812	12,776
Saginaw	8,661	53,478	162,896	193,058	4,160	804,978	113,011	61,156	39,972	86,141
St. Clair	6,551	17,700	208,541	138,773	13,197	344,391	126,385	57,928	83,087	56,064
St. Joseph	9,277	11,066	6,450	48,779	842	87,003	137,329	12,284	10,351	9,238
Sanilac	0	0	5,900	37,174	0	78,091	14,404	3,860	6,154	2,584
Schoolcraft	0	1,157	1,668	15,213	0	12,264	0	534	8,561	17,375
Shiawassee	0	127	7,020	40,725	0	110,022	31,215	43,077	973	8,933
Tuscola	16,752	5,058	2,356	48,056	0	37,134	30,343	7,668	1,739	1,973
Van Buren	5,537	1,819	30	63,738	0	97,661	28,122	6,130	2,507	11,788
Washtenaw	117	77,239	115,102	183,872	52,314	908,109	459,584	181,198	173,415	264,252
Wayne	134,763	527,877	1,218,111	2,010,426	13,970	4,955,405	1,794,582	407,206	441,216	562,457
Wexford	4,137	11,580	0	47,348	0	38,272	26,243	16,454	27,321	30,237
Out of state	27,041	1,112,982	5,205,292	328,105	19,710	6,417,865	3,440,396	1,432,028	2,109,049	1,371,659
Total	$1,156,454	$3,655,751	$9,089,865	$9,614,219	$274,571	$30,879,075	$14,130,879	$7,274,728	$5,091,653	$4,571,698

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-26. Sales and use tax collections by Michigan county by Business Classification Code, totals for 1989.

County	Watercraft Sales/ Service (BCC 557)	Men's/ Boy's Clothing (BCC 561)	Women's Clothing (BCC 562)	Taverns and Clubs (BCC 581, 582,&583)	Hotel Dining Rooms (BCC 584)	Family Rest- aurants (BCC 585)	Fast Food Rest- aurants (BCC 586)	Sport- ing Goods (BCC 595)	Hotel/ Motel Sales Tax (BCC 701)	Hotel/ Motel Use Tax (BCC 701)
Alcona	$ 8,215	$ 0	$ 4,255	$ 78,070	$ 0	$ 56,343	$ 2,584	$ 11,016	$ 6,559	$ 11,505
Alger	0	0	1,240	75,756	0	89,809	2,837	13,310	27,208	124,660
Allegan	245,275	45,283	29,229	373,389	17,210	551,991	95,129	52,510	66,926	107,703
Alpena	4,170	7,179	35,701	151,032	0	697,677	589,112	102,819	31,952	68,428
Antrim	84,803	0	3,451	95,364	0	219,334	11,248	68,769	197,092	289,960
Arenac	92,971	5,567	0	110,036	0	79,017	92,342	5,943	5,939	14,270
Baraga	0	0	6,310	34,761	0	33,318	27,881	7,031	19,939	29,456
Barry	7,212	6,688	3,379	71,560	0	216,819	46,684	120,023	2,794	7,599
Bay	211,265	91	154,635	427,182	0	1,357,324	459,397	251,032	17,042	61,988
Benzie	31,304	12,392	15,722	64,919	0	245,448	2,044	23,708	34,032	52,001
Berrien	255,645	113,678	96,399	736,729	0	1,330,338	1,846,068	216,088	237,223	391,539
Branch	118,248	14,609	38,383	95,264	4,646	159,877	59,369	54,511	48,272	61,274
Calhoun	53,504	7,354	27,075	527,809	0	3,050,867	684,057	117,983	165,058	102,517
Cass	50,545	6,749	13,686	192,754	0	136,716	63,232	83,154	2,901	7,696
Charlevoix	133,302	0	21,853	137,623	0	181,066	75,328	13,434	401,483	308,624
Cheboygan	179,009	9,667	1,669	116,513	0	182,116	197,360	57,077	19,569	67,579
Chippewa	50,705	6,704	114	241,026	65,043	460,513	258,499	63,696	80,513	131,607
Clare	21,922	11,152	14,044	120,584	0	168,103	43,610	232,307	57,752	29,130
Clinton	0	0	15,882	149,874	0	251,031	139,458	5,165	620	10,240
Crawford	3,102	0	4,940	63,945	0	152,636	19,791	21,306	91,016	157,937
Delta	22,821	388	644,048	262,034	22,270	438,037	175,341	81,753	26,778	122,610
Dickinson	16,273	36,010	36,014	195,345	0	98,477	369,899	19,930	30,782	90,095
Eaton	97,912	28,583	86,041	163,501	0	578,405	315,130	209,153	119,709	164,721
Emmet	268,909	10,371	42,012	463,165	6,751	580,018	162,948	195,664	128,251	548,239
Genesee	104,290	238,734	205,708	1,554,392	0	4,928,585	1,397,868	2,180,872	83,305	337,398
Gladwin	68,586	0	10,166	81,658	2,666	242,878	11,332	45,014	8,494	11,091
Gogebic	0	5,866	1,900	114,328	0	90,873	56,511	49,057	88,520	97,865
Grand Traverse	263,809	86,007	81,176	460,754	0	1,886,554	617,007	434,314	501,578	1,252,970
Gratiot	0	13,027	22,136	97,809	0	330,205	201,120	12,707	2,724	43,880
Hillsdale	4,987	11,794	31,648	119,954	0	342,369	204,485	22,735	3,200	15,017
Houghton	5,151	3,026	0	162,918	38,314	165,359	93,340	74,015	43,233	85,389
Huron	83,682	22,456	10,728	124,106	0	188,998	105,320	58,498	79,306	45,227
Ingham	81,690	254,245	293,141	1,846,105	17,978	2,865,644	1,216,351	293,114	343,908	124,506
Ionia	0	0	3,963	101,118	0	156,665	163,125	13,915	20,035	15,528
Iosco	14,936	0	29,359	152,489	0	282,061	75,240	28,276	81,902	157,006
Iron	0	7,018	9,041	68,857	0	114,097	16,198	34,341	23,399	28,786
Isabella	0	16,439	53,284	229,959	0	775,430	716,157	65,877	68,574	195,290
Jackson	216,650	91,677	9,016	548,714	0	1,019,480	1,224,971	138,660	56,616	163,020
Kalamazoo	118,669	700,833	177,494	698,377	0	2,112,577	2,588,169	723,704	140,271	71,159
Kalkaska	114,929	0	207	57,918	0	157,993	12,947	20,121	6,435	15,914
Kent	593,464	480,094	2,627,772	1,777,391	38,273	6,775,824	1,486,134	3,339,146	1,080,302	1,063,379
Keweenaw	0	0	0	3,901	0	32,013	783	0	28,230	21,079
Lake	111	0	0	111,547	0	46,443	14,430	18,391	6,869	22,893
Lapeer	87,130	7,413	30,430	183,340	28,228	620,876	120,627	14,776	42,446	8,003

Leelanau	2,430	0	15,037	149,168	39,387	297,564	31,787	16,732	135,794	257,898
Lenawee	114,812	38,321	29,526	288,607	0	878,246	515,624	95,079	36,451	34,341
Livingston	149,477	16,645	22,210	294,720	0	572,282	1,024,223	145,919	3,063	68,296
Luce	7,896	0	0	28,583	0	82,036	986	6,033	6,368	20,257
Mackinac	6,941	4,734	0	139,970	0	339,299	22,389	62,785	949,627	443,168
Macomb	3,406,951	280,465	277,029	3,348,154	93,544	8,002,207	2,426,031	1,313,308	320,540	517,625
Manistee	18,687	30,397	4,273	173,718	1,767	138,920	81,262	28,988	47,371	110,350
Marquette	42,267	21,425	84,494	365,490	0	539,212	527,122	133,079	128,496	148,237
Mason	26,376	19,822	13,059	87,188	0	315,576	77,821	51,178	29,498	90,103
Mecosta	30,328	23,954	1,987	152,632	0	260,884	181,064	20,156	23,496	50,197
Menominee	0	0	8,956	129,237	0	166,030	68,363	10,100	2,525	27,335
Midland	57,137	115,643	73,788	193,146	0	673,260	120,388	95,848	98,189	212,863
Missaukee	28,922	0	0	63,140	0	87,367	6,252	9,067	2,544	14,807
Monroe	94,441	29,817	42,012	405,515	0	551,367	304,067	168,262	67,989	111,233
Montcalm	53,684	0	10,327	143,680	23,039	555,842	36,889	28,880	10,334	5,044
Montmorency	55,289	184	0	61,184	0	209,412	5,039	5,520	8,131	28,737
Muskegon	378,608	93,251	30,002	533,648	0	1,231,237	674,129	224,226	48,475	79,892
Newaygo	47,586	33,754	51,433	67,528	0	204,252	31,874	39,098	3,513	11,248
Oakland	486,206	2,301,529	1,879,526	4,788,684	317,542	16,160,666	9,141,684	5,006,959	2,460,337	1,697,966
Oceana	6,006	0	0	106,329	0	136,681	28,415	21,126	12,924	30,433
Ogemaw	9,619	4,053	21,658	85,915	0	211,708	81,626	16,333	8,830	7,778
Ontonagon	0	8,662	8,715	86,084	0	82,064	2,815	16,845	11,429	70,866
Osceola	0	0	2,372	67,488	0	147,004	51,922	10,814	12,289	3,970
Oscoda	65	0	0	47,673	0	61,647	29,286	10,114	6,249	8,797
Otsego	10	8,023	2,404	72,684	0	317,362	66,925	32,017	99,671	217,976
Ottawa	670,213	116,837	88,483	342,324	0	1,584,281	485,194	386,615	309,076	295,266
Presque Isle	0	11,819	9,613	101,038	0	102,591	4,656	1,023	15,526	19,033
Roscommon	31,312	15,510	8,313	137,109	0	317,869	216,480	83,332	55,687	94,702
Saginaw	52,911	157,867	549,579	767,460	11,155	3,003,718	381,660	192,450	120,170	332,284
St. Clair	64,634	42,721	702,497	567,435	47,829	1,433,680	538,686	186,524	323,621	246,074
St. Joseph	53,715	33,821	26,442	218,385	3,724	387,255	565,565	62,772	37,732	42,881
Sanilac	0	0	25,294	160,766	0	331,889	60,197	14,495	25,613	18,092
Schoolcraft	0	4,613	7,551	46,293	0	60,907	0	3,223	34,762	98,945
Shiawassee	0	604	24,324	156,606	0	460,238	121,843	148,941	3,724	37,267
Tuscola	185,405	14,084	8,468	184,498	0	148,109	92,073	79,013	3,619	10,232
Van Buren	71,244	6,564	2,482	306,696	0	363,647	152,273	33,518	37,819	83,897
Washtenaw	727	217,815	384,981	739,692	182,068	3,518,786	1,826,346	599,807	662,143	976,272
Wayne	1,312,796	1,592,239	4,018,213	7,983,573	59,653	19,457,048	7,355,185	1,648,286	1,813,791	2,508,767
Wexford	26,777	35,923	23,636	190,105	0	161,965	111,289	54,526	112,840	150,041
Out of state	106,451	3,182,479	16,240,098	1,146,533	56,779	24,129,291	13,605,422	3,986,958	6,769,010	5,892,162
Total	$11,315,119	$10,724,669	$29,592,033	$38,372,548	$1,077,866	$122,133,603	$57,116,315	$24,644,864	$19,388,023	$21,812,110

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

Table 24-27. Use tax collections of hotels, motels, and tourist courts (BCC 701) by Michigan county, 1983-89.

County	1983	1984	1985	1986	1987	1988	1989
Alcona	$ 15,411	$ 14,779	$ 9,044	$ 9,170	$ 19,015	$ 12,603	$ 11,505
Alger	58,306	60,897	62,542	73,656	81,328	95,486	124,660
Allegan	91,332	94,770	105,305	108,190	106,361	126,481	107,703
Alpena	60,569	47,628	46,604	43,018	51,236	59,530	68,428
Antrim	86,716	96,078	123,422	154,794	200,770	296,994	289,960
Arenac	38,772	28,746	15,457	16,258	13,969	14,364	14,270
Baraga	7,521	7,567	9,099	10,516	10,874	15,381	29,456
Barry	4,278	5,612	7,078	5,176	7,490	6,556	7,599
Bay	83,910	74,253	50,446	45,405	50,437	62,179	61,988
Benzie	35,514	34,972	43,240	48,458	50,323	51,943	52,001
Berrien	171,110	178,651	201,454	209,441	237,382	287,795	391,539
Branch	28,157	26,183	40,892	57,428	60,428	68,649	61,274
Calhoun	128,787	124,654	114,402	112,056	78,511	100,171	102,517
Cass	25,848	8,218	7,336	9,803	9,126	9,733	7,696
Charlevoix	171,657	151,312	162,819	157,403	209,186	264,749	308,624
Cheboygan	103,596	48,924	54,787	69,559	47,499	74,866	67,579
Chippewa	105,022	96,869	106,064	114,822	153,179	165,736	131,607
Clare	28,235	28,092	32,454	35,366	28,741	28,304	29,130
Clinton	13,727	10,212	9,594	10,599	9,530	8,846	10,240
Crawford	120,618	112,252	131,188	125,471	141,255	148,080	157,937
Delta	98,831	74,303	72,059	75,129	108,971	124,749	122,610
Dickinson	50,420	53,801	64,517	59,755	62,063	78,578	90,095
Eaton	9,482	91,799	106,081	107,236	107,547	134,038	164,721
Emmet	383,230	354,779	351,311	423,925	428,353	505,949	548,239
Genesee	305,567	253,059	343,465	335,973	295,353	276,816	337,398
Gladwin	7,041	7,621	9,561	9,933	9,721	10,663	11,091
Gogebic	81,403	81,929	88,497	87,501	86,870	82,017	97,865
Grand Traverse	519,126	730,494	790,507	934,784	1,037,930	1,147,012	1,252,970
Gratiot	31,914	33,866	42,707	58,025	62,571	57,312	43,880
Hillsdale	11,362	13,477	13,234	10,179	12,804	14,193	15,017
Houghton	63,840	70,781	74,011	86,222	86,875	84,822	85,389
Huron	49,678	33,066	30,101	31,908	35,435	44,858	45,227
Ingham	131,421	129,748	205,688	218,294	149,757	125,870	124,506
Ionia	36,439	15,791	16,112	17,240	15,567	17,199	15,528
Iosco	80,494	80,106	90,648	95,137	90,139	131,462	157,006
Iron	127,986	17,273	17,720	17,311	20,389	19,716	28,786
Isabella	86,249	95,904	97,111	109,002	154,653	179,581	195,290
Jackson	162,479	173,750	145,222	136,323	150,094	155,476	163,020
Kalamazoo	150,274	211,008	172,676	150,393	148,210	256,529	71,159
Kalkaska	14,728	17,790	13,117	14,805	17,816	19,919	15,914
Kent	639,548	802,922	805,761	920,131	969,382	941,242	1,063,379
Keweenaw	26,088	12,056	14,899	16,014	17,560	19,433	21,079
Lake	47,483	12,919	9,664	10,208	10,417	9,038	22,893
Lapeer	35,093	3,983	18,287	15,370	9,573	7,561	8,003
Leelanau	137,726	176,338	178,615	199,835	237,834	240,763	257,898
Lenawee	18,063	25,960	23,475	43,445	52,574	40,776	34,341

Livingston	2,291	3,638	51,135	154,817	117,631	102,925	68,296
Luce	13,485	12,701	12,713	15,010	17,726	20,004	20,257
Mackinac	251,827	264,829	269,440	292,559	288,508	358,176	443,168
Macomb	338,217	N.A.	505,463	517,329	417,543	399,419	517,625
Manistee	84,244	88,402	94,419	104,797	120,871	127,009	110,350
Marquette	82,439	95,839	92,633	99,613	155,893	128,219	148,237
Mason	84,860	69,620	73,740	82,604	78,220	95,022	90,103
Mecosta	62,239	35,677	38,604	42,003	58,435	55,469	50,197
Menominee	20,965	6,715	15,584	14,728	22,203	22,672	27,335
Midland	137,473	130,194	125,518	131,424	163,036	192,938	212,863
Missaukee	4,861	16,374	7,748	9,237	9,347	10,598	14,807
Monroe	49,961	108,681	123,673	144,926	133,857	114,605	111,233
Montcalm	7,705	2,508	3,059	1,880	2,885	3,541	5,044
Montmorency	17,693	17,406	19,557	21,966	23,636	25,937	28,737
Muskegon	100,835	53,451	43,891	49,181	44,762	38,942	79,892
Newaygo	10,659	4,705	4,305	4,788	4,457	11,217	11,248
Oakland	1,504,260	1,916,929	2,046,861	2,300,476	1,898,369	1,807,878	1,697,966
Oceana	21,689	11,305	10,728	25,674	28,791	28,120	30,433
Ogemaw	15,383	15,997	19,873	21,499	19,265	8,382	7,778
Ontonagon	69,166	59,734	49,397	54,996	55,349	55,894	70,866
Osceola	2,927	2,707	2,943	4,137	10,124	4,673	3,970
Oscoda	8,895	8,010	8,081	11,977	5,821	7,766	8,797
Otsego	160,751	152,530	165,539	152,038	171,381	196,886	217,976
Ottawa	112,055	156,702	161,044	150,672	149,988	179,295	295,266
Presque Isle	5,879	6,822	9,098	10,596	7,717	9,927	19,033
Roscommon	N.A.	113,349	110,355	82,611	74,559	85,108	94,702
Saginaw	234,738	182,999	154,700	130,971	148,354	251,567	332,284
St. Clair	128,488	121,799	153,661	150,471	176,479	246,782	246,074
St. Joseph	48,446	44,436	90,414	24,690	26,868	28,670	42,881
Sanilac	13,103	17,895	28,225	17,514	17,662	18,440	18,092
Schoolcraft	55,327	62,587	73,423	74,974	76,280	80,881	98,945
Shiawassee	29,920	22,992	28,311	30,227	44,207	31,235	37,267
Tuscola	17,188	6,728	18,484	9,666	11,645	12,275	10,232
Van Buren	55,112	30,707	40,843	40,443	68,223	87,420	83,897
Washtenaw	281,645	329,163	400,335	473,275	542,825	666,774	976,272
Wayne	2,014,433	2,092,693	2,291,244	2,340,670	2,316,760	2,208,216	2,508,767
Wexford	53,070	58,449	65,869	76,596	69,065	135,764	150,041
Out of state	2,266,880	3,027,132	4,588,102	5,265,559	5,410,736	5,496,106	5,892,162
Total	N.A.	N.A.	$17,127,335	$18,737,261	$18,934,576	$19,978,770	$21,812,110

CAUTION: See discussion of data limitations in text.

NOTE: Details may not add to totals due to rounding of cents figures.

SOURCE: Michigan Department of Treasury, Systems Division.

APPENDICES

APPENDIX A

AUTHOR PROFILES

THOMAS E. COMBRINK is a research analyst with the Arizona Hospitality Research and Resource Center at Northern Arizona University. Prior to holding his present position he was a specialist with the Travel, Tourism, and Recreation Resource Center at Michigan State University.

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JOSEPH D. FRIDGEN is a Professor in the Department of Park and Recreation Resources at Michigan State University. Dr. Fridgen is engaged in recreation and tourism research focusing on public perceptions of and attitudes toward Michigan destinations. He is presently concluding a before/after study of tourists visiting northwest Lower Michigan.

DONALD F. HOLECEK is a Professor in the Department of Park and Recreation Resources at Michigan State University and the Director of the Michigan Travel, Tourism, and Recreation Resource Center. Dr. Holecek's research and Cooperative Extension Service activities focus on the economics and marketing of travel, tourism, and recreation.

GALE C. JAMSEN is Information Manager of the Fisheries Division, Michigan Department of Natural Resources. He is primarily responsible for the execution of surveys of sport anglers in Michigan and has been involved in numerous studies of sport fishing in Michigan.

DOUGLAS B. JESTER, JR. is Program Services Manager of the Fisheries Division, Michigan Department of Natural Resources. His responsibilities include planning, budgeting, and marketing for the Fisheries Division. Mr. Jester has performed extensive research on commercial and sport fishing in Michigan.

R. SAM LARSON is a doctoral candidate and research assistant in the Department of Educational Administration at Michigan State University. She has worked in the tourism industries in Vermont and Rhode Island.

EDWARD M. MAHONEY is an Associate Professor and Extension Specialist in the Department of Park and Recreation Resources at Michigan State University. Dr. Mahoney provides individuals in the travel and tourism industry with instruction in marketing and business management. He is also engaged in research on tourism marketing, the evaluation of travel/recreation advertising, and the economic impact of travel and tourism.

CHARLES M. NELSON is an Assistant Professor in the Department of Park and Recreation Resources at Michigan State University. Dr. Nelson teaches courses on recreation land management, introduction to parks and recreation, and National Parks. He is also engaged in research on the Minnesota campground market and the opinions of landowners and hunters with respect to deer hunting in Michigan.

DENNIS B. PROPST is an Assistant Professor in the Department of Park and Recreation Resources at Michigan State University. Dr. Propst's academic interests include human behavior in natural environments and the economic impacts of recreation and tourism.

DANIEL M. SPOTTS is an Assistant Professor with the Travel, Tourism, and Recreation Resource Center at Michigan State University. Dr. Spotts provides technical assistance to Michigan's travel and tourism industry, operates the Michigan Travel Monitoring System, and conducts marketing and geographic research on recreation and tourism.

DANIEL J. STYNES is a Professor in the Department of Park and Recreation Resources at Michigan State University. Dr. Stynes specializes in the mathematical modeling of recreation behavior, with applications to recreation planning, management, and marketing.

DANIEL R. TALHELM is a Visiting Associate Professor in the Department of Park and Recreation Resources at Michigan State University and President of Resource Econometrics, a natural resources economics and market assessment company. Dr. Talhelm conducts research in areas of resource economics such as tourism-based community economic development, the impacts of taxes and user fees on boating participation, non-market economic valuation of fish and wildlife, recreation needs assessment, and the feasibility of tourism developments.

PHILIP A. WELLS is Planning Program Manager of the Recreation Division, Michigan Department of Natural Resources. He is responsible for statewide recreation planning and provides technical assistance to recreation agencies in Michigan.

APPENDIX B

GLOSSARY OF ABBREVIATIONS

Abbreviations for States

AL	Alabama
AK	Alaska
AZ	Arizona
AR	Arkansas
CA	California
CO	Colorado
CT	Connecticut
DE	Delaware
FL	Florida
GA	Georgia
HI	Hawaii
ID	Idaho
IL	Illinois
IN	Indiana
IA	Iowa
KS	Kansas
KY	Kentucky
LA	Louisiana
ME	Maine
MD	Maryland
MA	Massachusetts
MI	Michigan
MN	Minnesota
MS	Mississippi
MO	Missouri
MT	Montana
NE	Nebraska
NV	Nevada
NH	New Hampshire
NJ	New Jersey
NM	New Mexico
NY	New York
NC	North Carolina
ND	North Dakota
OH	Ohio
OK	Oklahoma
OR	Oregon
PA	Pennsylvania
RI	Rhode Island
SC	South Carolina
SD	South Dakota
TN	Tennessee
TX	Texas
UT	Utah
VT	Vermont
VA	Virginia
WA	Washington
WV	West Virginia
WI	Wisconsin
WY	Wyoming
DC	District of Columbia

Other Abbreviations

ATV	All-terrain vehicle.
Avg.	Average.
BCC	Business Classification Code (used by Michigan Department of Treasury).
(D)	Figures withheld to avoid disclosure of operations of individual establishments.
FY	Fiscal Year.
MAPCO	Michigan Association of Private Campground Owners.
MDNR	Michigan Department of Natural Resources.
MSU	Michigan State University.
N=	In survey research, the number of observations upon which a statistic is based.
N.A.	Not available.
n.d.	No date on publication.
NLP	Northern Lower Peninsula of Michigan.
ORV	Off-road vehicle.
P.A.	Public Acts (of Michigan).
Pct.	Percent.
RV	Recreation vehicle.
SIC	Standard Industrial Classification.
SLP	Southern Lower Peninsula of Michigan.
TEIM	Travel Economic Impact Model (of the U.S. Travel Data Center).
TTRRC	Travel, Tourism, and Recreation Resource Center, Michigan State University.
UP	Upper Peninsula of Michigan.
US	United States.
USTDC	U.S. Travel Data Center.

APPENDIX C

DIRECTORY OF SPONSORS

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Michigan Department of Commerce
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John Savich, Director

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Lowell D. Kinney, Region Director - Public Affairs

William F. Krause, recreation consultant
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Ludington Area Visitors and Convention Bureau
P.O. Box 160
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Sue Brillhart, General Manager

Consumers Power Company
Economic Development Department
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Janet L. DiRosa, Senior Consultant

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Southwestern Michigan Tourist Council
2699 M-139
Benton Harbor, MI 49022
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PHOTO CREDITS

Front Cover

Highway, bridge, and airport scenes: Michigan Department of Transportation, Lansing, Michigan.
Others: Michigan Travel Bureau, Lansing, Michigan.

Text

Page 179: Leavenworth Photographics, Inc., Lansing, Michigan.
Page 475: Educational Institute of the American Hotel and Motel Association, East Lansing, Michigan.
Page 481: Stouffer Hotel Company, Solon, Ohio.
Others: Michigan Travel Bureau, Lansing, Michigan.